


# HCD-H150/H500

## SERVICE MANUAL

HCD-H150 and HCD-H500 are the tuner, deck, CD and amplifier section in FH-B150/B155 and MHC-500 respectively.

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

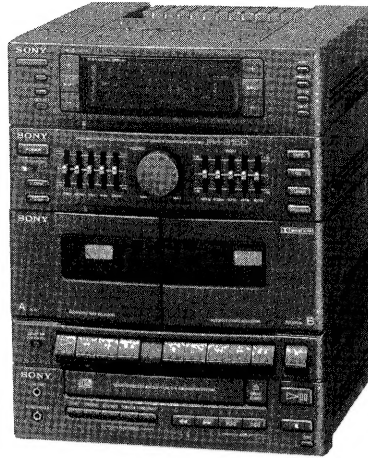


Photo: HCD-H150

*AEP Model*  
HCD-H150/H500  
*UK Model*  
HCD-H500  
*E Model*  
*Tourist Model*  
*US Model*  
*Canadian Model*  
*East European Model*  
*Australian Model*  
HCD-H150



### SPECIFICATIONS

#### AUDIO POWER SPECIFICATIONS

#### POWER OUTPUT AND TOTAL HARMONIC DISTORTION:

With 6 ohm loads, both channels driven, from 60 Hz – 20 kHz; rated 16 watts per channel minimum RMS power, with no more than 1% total harmonic distortion from 250 milliwatts to rated output.

#### Tuner Section

System FM stereo, FM/AM superheterodyne tuner

#### FM tuner section

Tuning range 65.0–74.0MHz (East European)  
87.5–108 MHz  
Antenna Telescopic antenna (HCD-H150)  
FM lead antenna (HCD-H500)  
Antenna terminals 75 ohms unbalanced  
Intermediate frequency 10.7 MHz

#### AM tuner section

Tuning range

For US and Canadian MW: 530–1.710kHz  
For Italian MW: 522–1.611kHz  
LW: 144–288kHz

For AEP, Italian, Germany, East European and UK  
MW: 531–1,602 kHz  
LW: 153–279 kHz

For other countries

MW: 531–1,602 kHz  
SW: 5.95–17.9 MHz

Antenna AM loop antenna, External antenna terminals

Intermediate frequency 450 kHz

#### Amplifier Section

Continuous RMS power output  
20 + 20 watts (6 ohms at 1 kHz, 5% THD)

Peak music power output  
(For the models other than AEP, Germany, East European, Italian, US, Canadian and UK)

Inputs 240 watts (6 ohms)  
MIX MIC (minijack): sensitivity 1 mV, impedance 600 ohms

For AEP, Italian, Germany, East European and UK  
PHONO (phono jack): sensitivity 5 mV, impedance 47 kilohms

For other countries  
AUX/VIDEO (phono jack): sensitivity 400 mV, impedance 47 kilohms

Outputs

HEADPHONES (stereo minijack): accepts headphones of 8 ohms or more.  
SPEAKER: accepts speakers of 6 to 16 ohms.

#### Compact Disc Player Section

System Compact disc digital audio system  
Laser Semiconductor laser ( $\lambda=780$  nm)  
Emission duration: Continuous  
Laser output Max. 44.6  $\mu$ W\*  
\* This output is the value measured at distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.  
Signal to noise ratio More than 95 dB  
Dynamic range More than 90 dB

#### Cassette Deck Section

Recording system 4-track 2-channel stereo  
Frequency response (DOLBY NR OFF) 60–13,000 Hz ( $\pm 3$  dB), using TYPE I cassette (Sony HF-S)  
60–14,000 Hz ( $\pm 3$  dB), using TYPE II cassette  
Wow and flutter 0.1% WRMS  $\pm 0.3\%$  (DIN)

– continued on next page –

## COMPACT DISC DECK RECEIVER

# SONY®

## TABLE OF CONTENTS

## Speaker Section

Speaker system	3 way system
Speaker units	Woofer: 14 cm dia., cone type Tweeter: 5 cm dia., cone type Super tweeter: 2cm dia., dome type
Enclosure type	Bass reflex
Frequency range	60 Hz – 20 kHz
Sensitivity	88 dB/W/m
Impedance	6 ohms
Dimensions	Approx. 185 × 285 × 225 mm (w/h/d) (7 <sup>3</sup> / <sub>8</sub> × 11 <sup>1</sup> / <sub>4</sub> × 8 <sup>7</sup> / <sub>8</sub> inches)
Weight	Approx. 3.2 kg (7 lb 1 oz) net per speaker

## General

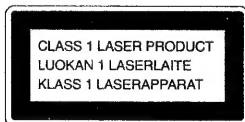
Destination	Power requirements	Power consumption
AEP	220-230V AC, 50/60Hz	60 watts
UK	240V AC, 50Hz	120 watts
Other countries	110-120V or 220-240V AC adjustable, 50/60	60watts
US	120V AC, 60Hz	60 watts
Canadian	120V AC, 60Hz	80 watts
East European, Germany, Italian	220-230V AC, 50Hz	60 watts

Dimensions	Approx. 615 × 285 × 255 mm (w/h/d) (24 <sup>1</sup> / <sub>4</sub> × 11 <sup>1</sup> / <sub>4</sub> × 10 <sup>1</sup> / <sub>8</sub> inches) incl. projecting parts and controls
Weight	Approx. 12.2 kg (26 lb 14 oz)
Accessories supplied	AM loop antenna (1) Remote commander (1) Sony SUM-3 (NS) batteries (2) FM lead antenna (1) (HCD-H500) Speaker cords (2) (HCD-H500 : except UK)

Design and specifications subject to change without notice.

## Note



This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.




This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the rear exterior.

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## SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  OR DOTTED LINE WITH MARK  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

## SECTION 1 SERVICING NOTES

### SAFETY CHECK-OUT

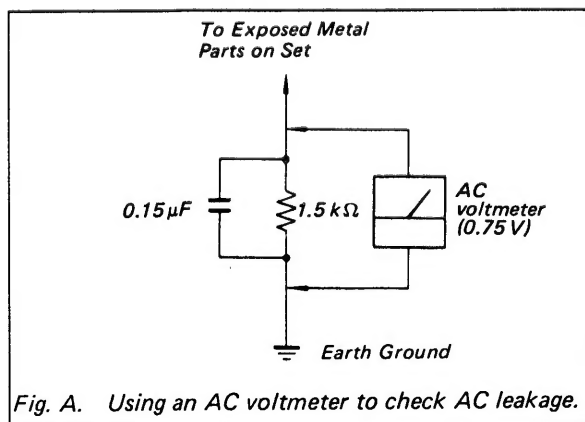
After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE TEST

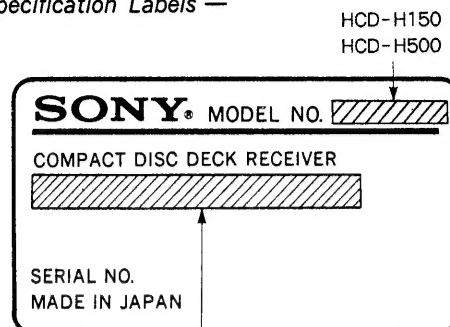
The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)



### MODEL IDENTIFICATION

— Specification Labels —



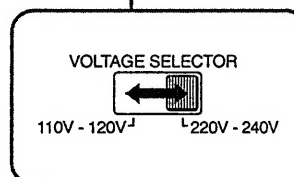
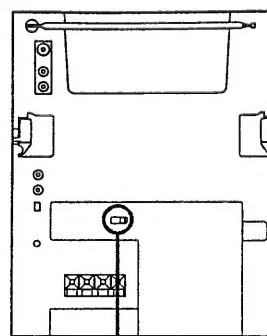
AEP model : AC : 220-230V~50/60Hz  
 E, Tourist, Saudi Arabia, Australian model : AC : 110-120/220-240~50/60Hz 60W  
 UK model : AC : 240V~50Hz 120W  
 US model : AC : 120V~60Hz 60W  
 Canadian model : AC : 120V~60Hz 80W  
 East European, Germany, Italian model : AC : 220-230V~50Hz

### On operating voltage

Before operating the stereo system, confirm that the operating voltage of your system is identical with the voltage of your local power supply.

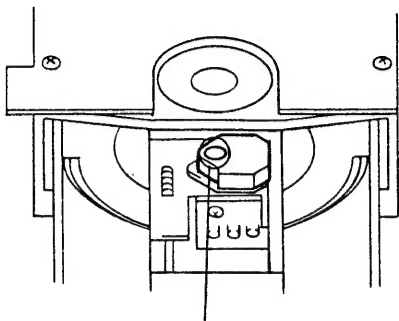
US, Canadian model	120V AC, 60Hz
AEP model	220-230V AC, 50/60Hz
E Saudi Arabia Tourist Australian model	110-120, 220-240V AC adjustable, 50/60Hz Before connecting the AC power cord to a wall outlet, make sure that the voltage selector at the rear is set to the local power line voltage. If not, reset the selector. <b>A</b>
East European, Germany, Italian model	220-230V AC, 50Hz

**A**



### LASER DIODE AND FOCUS SEARCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation is performed while observing the objecting lens.



- ① Confirm that laser beam is spread.
- ② Up and down motion of the objective lens. (3 times)

### NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

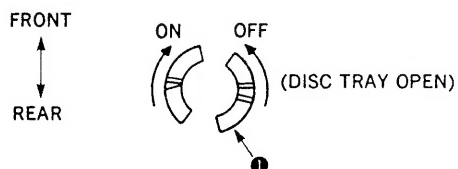
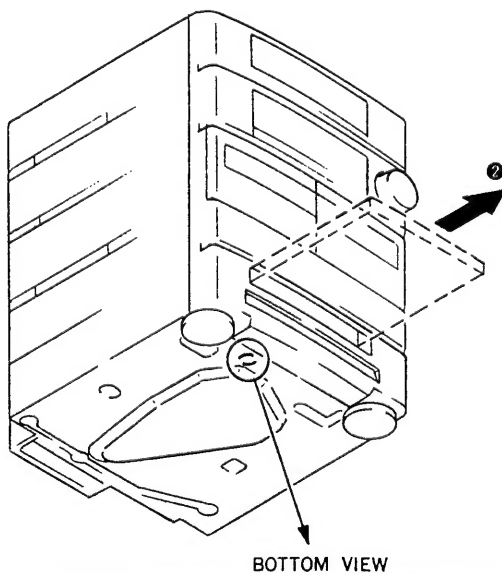
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

### NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

### HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF



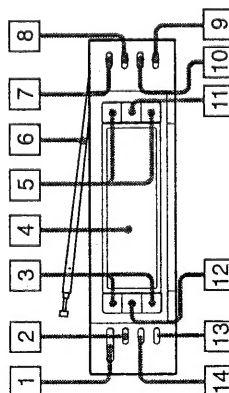
- (1) Insert to ① for tapering driver, etc., and turn in the direction of arrow OFF. (Disc tray open)
- (2) Tray as come out little of front panel, pull out in the direction of arrow ② by hand.

## SECTION 2 GENERAL

This section is extracted from instruction manual.

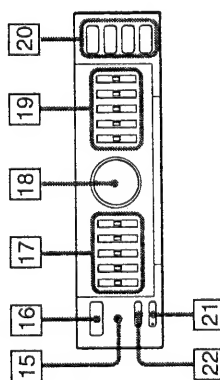
### Tuner Section A

- 1 TIMER CONTROL button (56)
- 2 TIMER SET button (54)
- 3 PRESET/TIMER +/- (preset station scan/time set) buttons (20, 26, 54)
- 4 Display window
- 5 TUNING +/- buttons (24)
- 6 Telescopic antenna (FH-B150 and FH-B155 only) (28)
- 7 AUTO tuning button (24)
- 8 MEMORY button (26)
- 9 NEXT button (20, 54)
- 10 ENTER button (26)
- 11 BAND selector (24)
- 12 SHIFT (memory page select) button (26)
- 13 CLOCK SET button (20)
- 14 CLOCK DISPLAY button (20)



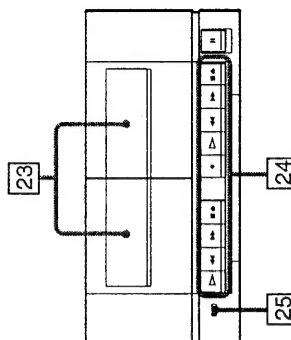
### Amplifier Section B

- 15 STANDBY indicator  
Remains illuminated as long as the AC power cord is connected to a wall outlet.
- 16 POWER switch
- 17 5-band graphic equalizer for left channel (22)
- 18 VOLUME control (22)
- 19 5-band graphic equalizer for right channel (22)
- 20 Function selectors (18, 24, 30, 42, 46)
- 21 S-SUR effect button (22)
- 22 DBFB (Dynamic Bass Feedback) button (22)



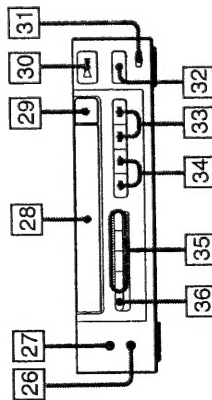
### Cassette Deck Section C

- 23 Cassette holders
- 24 Tape operation buttons  
▷: PLAY (playback) button (42)  
◀◀: REW (rewind) button (52)  
▶▶: FF (fast forward) button (52)  
■ : STOP/EJECT button (42)  
● : REC (record) button (46)  
|| : PAUSE button (46)
- 25 DOLBY NR (Dolby Noise Reduction) switch (42, 46, 48)

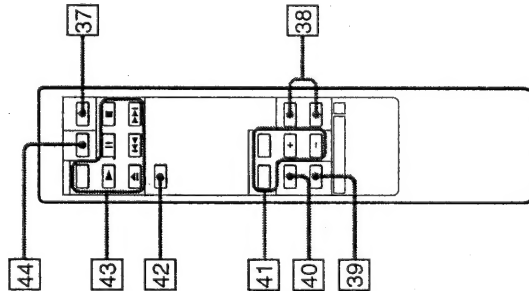


**CD Player Section D**

- 26 HEADPHONES jack (stereo minijack) (22)
- 27 MIX MIC (microphone) jack (minijack) (60)
- 28 Disc compartment
- 29 OPEN/CLOSE button
- 30 play/pause button
- 31 EDIT button (48)
- 32 (stop) button
- 33 REPEAT button (Automatic Music Sensor) buttons (32)
- 34 REPEAT button (manual search) buttons (32)
- 35 PLAY MODE selectors
- 36 REPEAT play button (36)
- 37 CONTINUE play button (36, 38)
- 38 SHUFFLE play button (36)
- 39 PROG FM play button (38)
- 40 TIME display selector (40)

**Remote Commander E**

- 37 POWER switch
- 38 VOL (volume) +/- control buttons
- 39 VIDEO/AUX select button (Used only for models for other countries)
- 40 PHONO select button (Used only for European and U.K. model)
- 41 Tuner operation buttons
- 42 TAPE select button
- 43 CD player operation buttons
- 44 SLEEP timer button

**Connections****Notes on connection**

- Connect the AC power cord last.
- Cord plugs and jacks are color coded. Red plugs and jacks are for the right channel (R) and white ones for the left channel (L).

**Speaker Cord Connection A**

- 1 Strip the coating of the speaker cord by 15 mm (5/8 inches) from the end.
- 2 Connect the right speaker to R, with the red cord to ⊕ and the black cord to ⊖. Connect the left speaker to L, with the red cord to ⊕ and the black cord to ⊖.

**Attaching the speakers to the main unit B (FH-B150 and FH-B155 only)**

- 1 Unlock the stopper and slide the speaker so that it hooks to the system.
- 2 Lock the stopper.

**AM Loop Antenna Connection C**

For the European and U.K. model

For the models for other countries

- Connect the supplied AM loop antenna to the AM and + terminals.

**FM Lead Antenna Connection D (MHC-500 only)**

- Connect the supplied FM lead antenna to the FM 75 Ω terminal and extend horizontally.

## Connections

### For Better FM Reception **E**

#### For the European and U.K. model **E-1**

Connect the outdoor FM antenna to the FM75Ω terminal, using 75-ohm coaxial cable and IEC standard socket connector.

#### For the model for other countries **E-2**

Connect the outdoor FM antenna to the FM75W and  $\Delta$  terminals, using 75-ohm coaxial cable.

### For Better AM Reception **F**

#### For the European and U.K. model **F-1**

#### For the models for other countries **F-2**

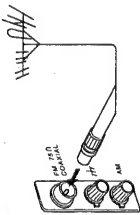
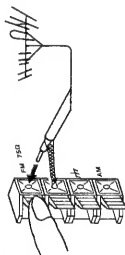
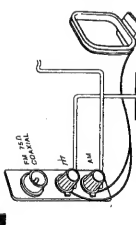
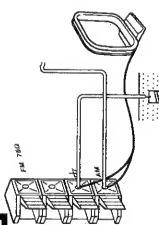
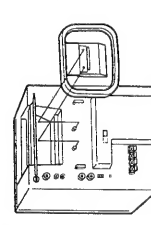
Use a 6- to 15-meter (20- to 50-feet) insulated wire for connecting the AM terminal.

Connect the  $\Delta$  terminal to a good ground.

#### Important

When you use an external antenna, be sure to ground it against lightning. Never connect the ground wire to a gas pipe. Doing so is extremely dangerous.

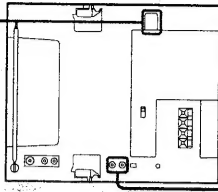
To attach the AM loop antenna to the main unit in order to carry the unit  
See the illustration. **G**

**E-1****E-2****F-1****F-2****G**

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### Power Connection **A**

Connect the supplied AC power cord to the AC IN connector and to a wall outlet.

**A****B**

### Adding Other Components to your System **B**

#### For the European and U.K. model **B-1**

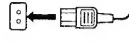
You can connect a turntable system to the PHONO jack.

To listen to the turntable system, press the PHONO button on the front panel.

#### For the model for other countries **B-2**

You can connect a VTR, etc. to the VIDEO/AUX jack.

To listen to the connected equipment, press the VIDEO/AUX button on the front panel.

**A****B-1**

### Changing the MW tuning interval (except for the European and UK model)

The MW tuning interval is preset at the factory to 10 kHz for USA and Canadian models, and 9 kHz for the model for other countries.

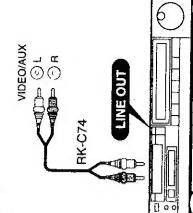
If you use a system where the frequency allocation system is different from the preset interval, change the interval as follows.

- 1 Turn on the power.
- 2 Tune in any MW station.
- 3 Turn off the power.
- 4 Turn the power back on while pressing TUNING +.

To reset the interval, follow the same procedure.

#### Important

When the interval is changed, stored stations will be erased from the memory.

**B-2**

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## Clock Setting

### Setting the Clock

**Example: Set to 9:25 in the morning.**  
When the AC power cord is connected, the display shows:  
0:00 for the European and UK model  
AM 0:00 for the model for other countries.  
AM 12:00 for USA and Canadian model.

- 1 Press **CLOCK SET**.
- 2 Set the hour with **PRESET/TIMER +/-** buttons.
- 3 Press **NEXT**.
- 4 Set the minutes with **PRESET/TIMER +/-** buttons.
- 5 Press **NEXT**.  
The clock starts operating.

### Information on the time

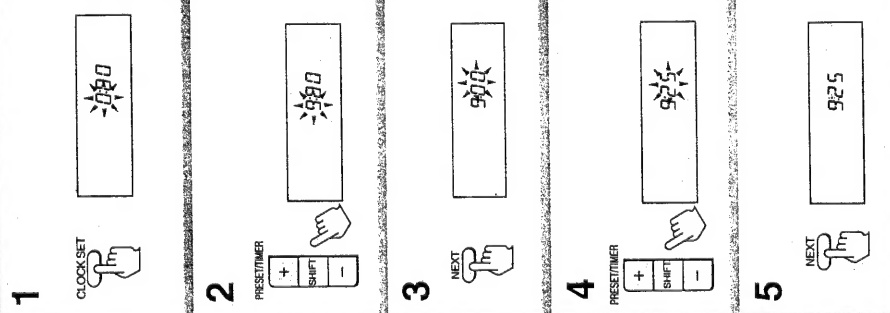
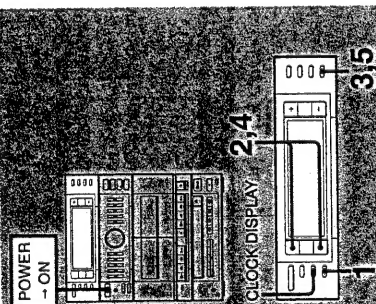
The European and UK model shows the time in a 24-hour cycle.  
The model for other countries show the time in a 12-hour cycle.

### When a power interruption occurs

The power is backed up for approximately 1 day. If the power is recovered within 1 day, there is no need to reset the clock and timer. If it is longer than 1 day, both the clock and timer settings are erased, and "0:00"(AM 12:00) will flash on the display.

### To check the present time while using the system

Press **CLOCK DISPLAY**.  
The time display disappears after a few seconds.



## Radio

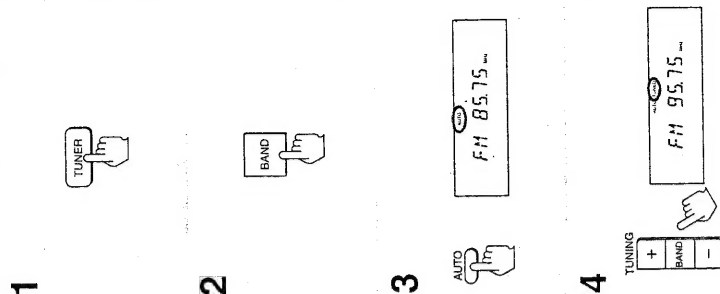
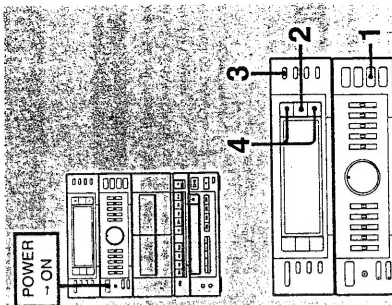
The automatic tuning allows you to receive stations whose signal is sufficiently strong. When the signal is too weak, use the manual tuning.

### Tuning in Automatically

- 1 Press **TUNER**.
- 2 Press **BAND** repeatedly until the desired band appears.  
As you press **BAND**, the band changes as follows:  
USA and Canadian model:  
FM → AM  
European and UK model:  
FM → MW → LW  
Model for other countries:  
FM → SW → MW
- 3 Press **AUTO**.  
Make sure that **AUTO** appears in the display.
- 4 Select the station with **TUNING +** or **-**.

### Tuning in Manually

- 1 Press **TUNER**.
- 2 Select band by pressing **BAND**.
- 3 Press **AUTO** so that **AUTO** disappears from the display.
- 4 Select station with **TUNING +** or **-**.





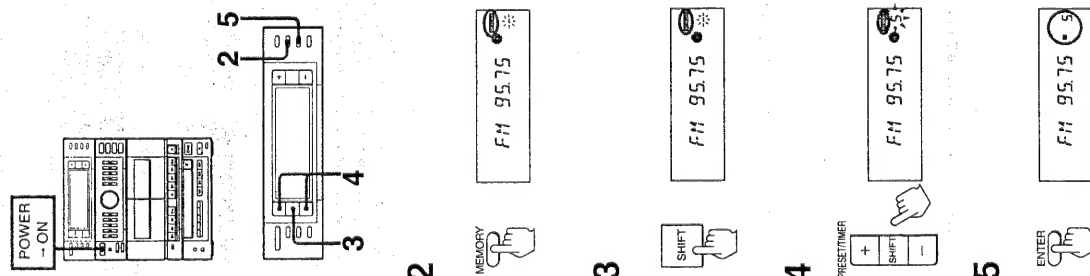
A total of 30 stations can be stored in any desired sequence, so that you can tune in the stored station directly by entering the memory page and number.

## Storing Stations

- 1 Tune in the desired station.
- 2 Press **MEMORY**. **MEMORY** appears for several seconds.
- 3 While **MEMORY** is on, press **SHIFT** to select the memory page (A, B or C). The memory pages (A, B or C) can be classified according to the music category, station band, etc.
- 4 While **MEMORY** is on, press **PRESET/TIMER** + or - to select the number (1 to 10).
- 5 Press **ENTER**. **MEMORY** disappears and the station is stored.
- 6 Repeat 1 to 5 for each station to be stored.

If you cannot store a station successfully Press **MEMORY** again so that **MEMORY** appears and then select the desired page and number. Be sure to operate while **MEMORY** is on (approx. 4 seconds).

When you have selected the wrong page and number Press **MEMORY** and then select the correct page and number.



## Radio

### To Tune in a Preset Station

- 1 Press **SHIFT** to select memory page.
- 2 Press **PRESET/TIMER** + or - to select the desired number.

#### Indicator on the display

**TUNED:** Appears when a station of sufficient signal strength is tuned in.

**STEREO:** Appears when an FM stereo program of sufficient signal strength is received.

#### Antenna adjustment **A**

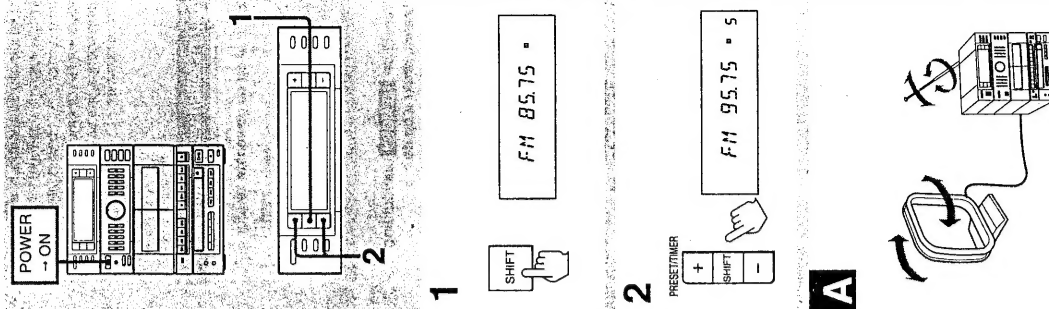
For FM reception, adjust the length and direction of the telescopic antenna (FH-B150 and FH-B155 only).

For AM (MW, LW, and SW) reception, find the best location of the AM loop antenna.

Can a previously stored station be erased? No. Erasing only is not possible, but storing a new station replaces the previous one.

#### Important

The stored stations remain for approximately 1 day even if no power is supplied (e.g. the power cord is disconnected, etc.). If they are erased, store the stations again.



## Audio Adjustment

### Volume Adjustment

Turn **VOLUME A** clockwise to increase the sound level, or counterclockwise to decrease it.  
(Or press **VOL +** or **-** on the remote commander.)

### Sound Quality Adjustment

#### To reinforce bass

Press **DBFB. E**  
The lower the sound level is, the more the bass is emphasized.

#### To adjust sound quality to your preference

Adjust the graphic equalizer controls for the right and left speaker outputs individually. **C**

100 Hz: Boost or cut heavy bass.

400 Hz: Adjust the power, spaciousness and warmth of the sound.

1 kHz: Increase the presence of vocals.

4 kHz: Enhance the brightness of sound, or reduce stridency.

12 kHz: Highlight the fine details of instrumental sound.

#### To activate surround effect for stereo sound

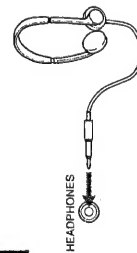
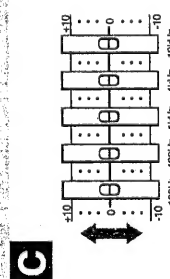
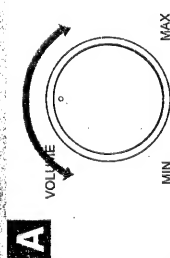
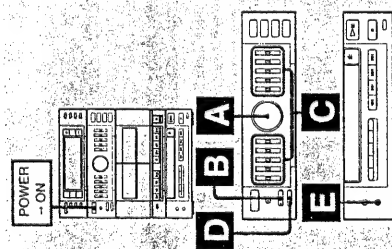
Press **S-SUR** (simulated surround) **D** during a stereo sound reproduction. This creates the atmosphere of a movie theater or concert hall.

This function is not effective for a monaural sound.

#### For personal listening

Connect headphones to **HEADPHONES E**.

No sound comes from the speakers.



## Disc Playing

### Playing the Entire Disc

1 Press **CD**.

2 Press **OPEN/CLOSE** to open the tray.

3 Place the disc with the printed side up.

4 Press **▶||**.

The tray closes and play starts.

The display shows **A** the track number, **B** elapsed playing time of the track and **C** track numbers.

#### Caution on adjusting volume

Do not turn up the volume while listening to a portion with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level portion is played.

#### To stop play

Press **■**.

#### To stop for a moment during play

Press **▷||**.

To resume play, press it again.

#### To stop play and open the tray

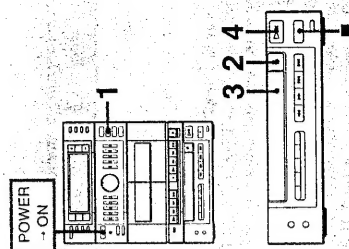
Press **OPEN/CLOSE**.

#### To play a 8 cm (3-inch) CD

Place it on the inner circle of the tray. If the disc is provided with an adaptor, first remove it. Do not put a normal CD (12 cm/5-inch) on top of an 8 cm (3-inch) CD.

#### When the TUNER function is selected

The CD player section does not operate. This prevents interference with radio reception.

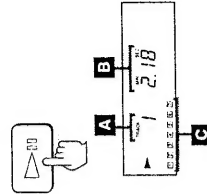


1

2

3

4



## Locating a Particular Selection — Automatic Music Sensor (AMS)

The AMS locates the beginning of a selection.  
This function works during play or pause.

**To locate the beginning of the current or preceding selection **A-1****  
Press **⏮** as many times as required.  
Keep **⏮** pressed to skip selection.

**To locate the beginning of a succeeding selection **A-2****  
Press **⏭** as many times as required.  
Keep **⏭** pressed to skip selection.

## Locating a Particular Point in a Selection

You can locate any particular point in the disc during play.

**To search while monitoring the sound**

**To move forward at high speed **B-1****  
Keep **⏭** pressed during play and release at the desired point.

**To move backward at high speed **B-2****  
Keep **⏮** pressed during play and release at the desired point.

**To search quickly**

**1** Press **⏮** to set the unit in pause mode.

**2** Keep **⏮** or **⏭** pressed.  
The search speed increases, but there is no sound. Find the desired point by observing the display.  
Press **⏮** again at the desired point.

## Information display

To change the time display, press **TIME** during play.

As you press **TIME**, the display changes to give you the following information.

- A** Elapsed playing time
- B** Remaining time in a selection. If the current selection number is over 20, "----" is displayed.
- C** Remaining time of the disc

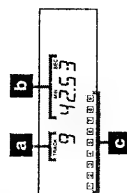
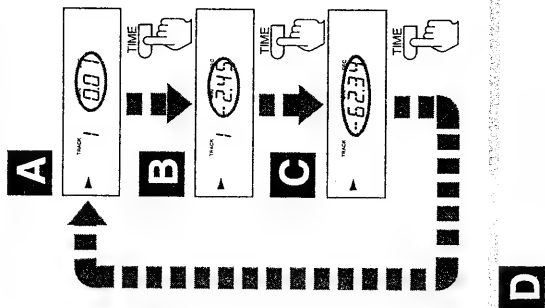
**When **TIME** is pressed with a disc in the tray **D****  
The following appear for approx. 5 seconds.

- a** Last track number
- b** Total playing time of the disc
- c** Track numbers

For discs containing 17 selections or more, up to 17 appear and the rest do not appear.

## Notes on handling discs **E**

- To keep the disc clean, handle the disc by its edge. Do not touch the surface. **a**
- Do not stick paper or tape on the disc. **b**
- Do not expose the disc to direct sunlight or heat sources such as a hot air duct, or leave it in a car parked in direct sunlight as there may be a considerable rise in the temperature.
- After playing, store the disc in its case.



## Disc Playing

### Playing in a Random Order — Shuffle Play

Shuffle play function plays all the selections in a random order.

- 1 Press **OPEN/CLOSE** to open the tray.
- 2 Place the disc.
- 3 Press **OPEN/CLOSE** to close the tray.
- 4 Press **SHUFFLE**.  
SHUFFLE appears.
- 5 Press **▶▶**.

To stop playing  
Press **■**.

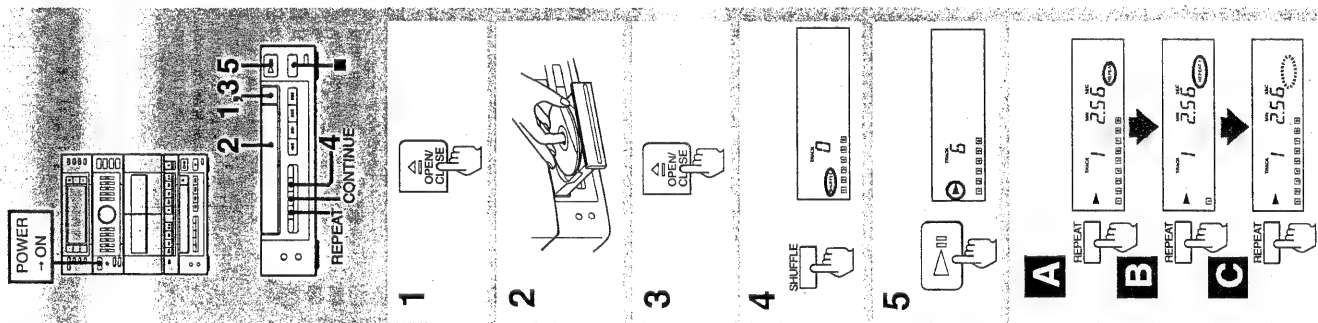
To cancel shuffle play  
Press **CONTINUE**.  
SHUFFLE disappears, and play continues in the normal play mode.

### Playing Repeatedly — Repeat Play

To repeat all selections **A**  
Press **REPEAT** once during play so that **REPEAT** appears.

To repeat single section **B**  
Press **REPEAT** twice while playing the desired section so that **REPEAT 1** appears.

To cancel repeat play **C**  
Press **REPEAT** so that neither **REPEAT** nor **REPEAT 1** is on.



### Playing in a Desired Order — Program Play

You can make a program for up to 24 selections in the order you want them to be played.

- 1 Insert the disc.
- 2 Press **PROGRAM**.  
PGM appears in the display.
- 3 Press **◀◀** or **▶▶** to display the desired selection.
- 4 Press **PROGRAM**.
- 5 Repeat steps 3 and 4 for the desired selections.
  - A** Last programmed selection
  - B** Total playing time of selections
  - C** Programmed selection numbers
- 6 Press **▶▶**.

#### To stop playing

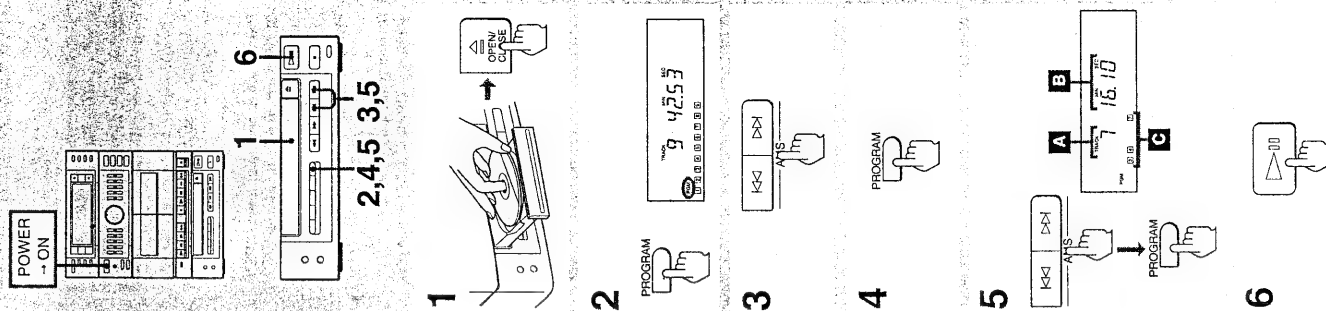
Press **■**.  
To restart the same program play, press **▶▶**.

#### To resume normal play

Press **CONTINUE**.  
The program is erased and the play continues in the normal play mode.

If "--" is displayed instead of the actual time

- You have programmed a selection number over 20.
- The total time has exceeded 100 minutes.



### To check your program

- 1 Press  $\Delta$  to enter the pause mode.
- 2 Press  $\Delta$ .

As you press  $\Delta$ , the track numbers appear in the order in which they are programmed.

When you finished checking, press  $\blacksquare$  once. (Be sure that you press  $\blacksquare$  only once. If you press it twice, the program will be erased.)

### To add a selection to the end of the program

Follow the same procedure as "Playing in a Desired Order" while the unit is in the stop mode.

You cannot add selections during play.

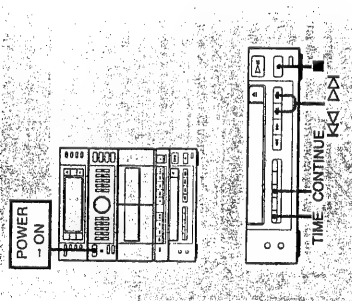
### To erase the entire program

Press  $\blacksquare$  once during stop; twice during play.

The program is also erased when you press  $\blacktriangle$  to open the tray or turn off the system.

### To check the remaining time

Press TIME once to see the remaining time of the selection being played; twice to see the total remaining time of the programmed selections; once more to return to the initial display.



## Tape Playback

### Playback Operation

- 1 Press TAPE. TAPE appears in the display.

- 2 Insert the tape.

- 3 Depress  $\blacktriangle$ .

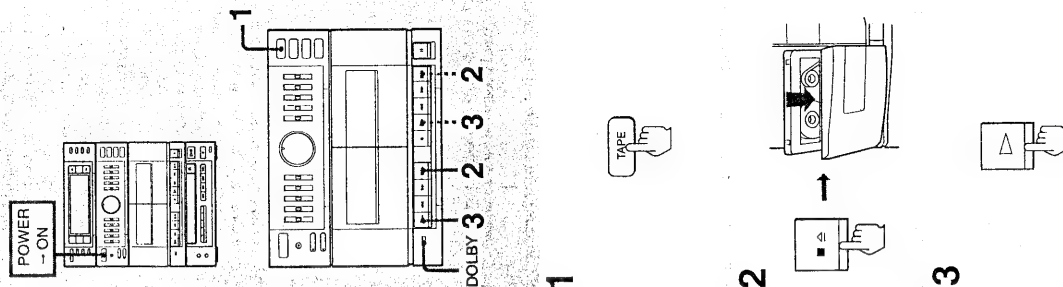
To stop playback  
Press  $\blacksquare$ .

When listening to a cassette recorded with Dolby noise reduction system\*  
Set DOLBY NR to ON.

#### What is the Dolby NR system?

Dolby NR (noise reduction) system reduces tape hiss noise in low-level high-frequency signals. The system boosts these signals in recording and lowers them in playback.

\* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and double-D symbol  $\text{DD}$  are trademarks of Dolby Laboratories Licensing Corporation.



## Playing from Deck A to B in Succession - Relay Play

When the front side of the tape in deck A has been played back, the front side of the tape in deck B starts playback automatically.

- 1 Insert recorded cassettes in both decks.
- 2 Depress  $\triangleright$  on deck A.
- 3 Depress  $\triangleright$  on deck B.

To stop relay play  
Press  $\blacksquare$  of the deck playing.

## Notes on Cassettes

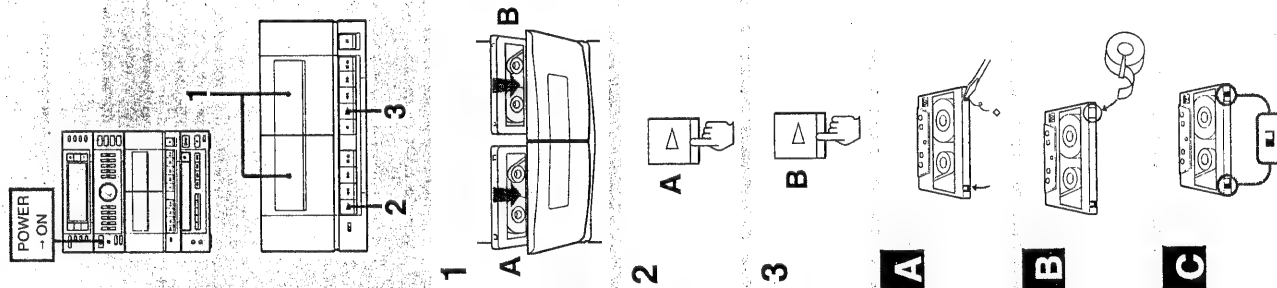
### To protect recording **A**

Break off the tab on the left side of the cassette whose recording is to be protected.

### To re-record the cassette **B**

Cover each slot with plastic tape.

When using a TYPE II (CrO<sub>2</sub>) cassette, be careful not to cover the detector slots which are necessary for automatic-tape type detection. **C**



## Recording (Deck B)

### Recording Operation

Use only TYPE I (normal) or TYPE II (CrO<sub>2</sub>) tapes for recording.

- 1 Insert a tape in deck B.
- 2 Select program source with the function selectors and play it.  
The display shows the selected program source.

### 3 Set DOLBY NR.

To use the Dolby NR system, set DOLBY NR to ON.  
Otherwise, set it to OFF.

- 4 Depress  $\bullet$ .  
 $\triangleright$  is depressed at the same time.  
Recording starts.

### To stop recording

Press  $\blacksquare$ .

### Notes

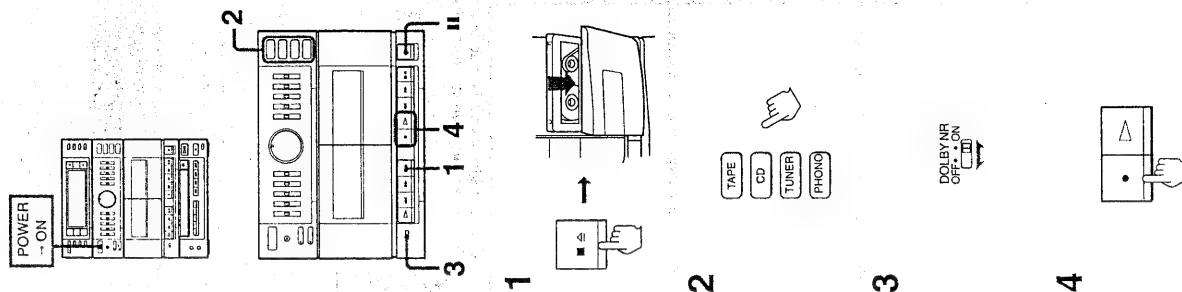
- Graphic equalizer controls are not effective for recording.
- The recording level is fixed and cannot be adjusted manually.

### How to start recording precisely

- 1 Depress  $\blacksquare$  after step  $\triangleright$  in "Recording Operation" above.
- 2 Depress  $\bullet$ .  
 $\triangleright$  is depressed at the same time.
- 3 Press  $\blacksquare$  again at the desired point.

If whistling noise is heard during MW and LW recording

(only for the European and UK model)  
Slide the ISS (Interference Suppress Switch) at the rear to the position depending on which best reduces the noise.



## Editing the CD for Recording

The CD player automatically edits the selections on a CD according to the tape length.

- 1 Insert the tape in deck B and the disc in the CD player.

- 2 Set DOLBY NR.

To use the Dolby NR system, set DOLBY NR to ON. Otherwise, set it to OFF.

- 3 Press CD of the function selector.

- 4 Press EDIT.

Make sure that EDIT and ---- appear in the display.

- 5 Designate the tape length of one side using  $\blacktriangle$  and  $\blacktriangleleft$ , or  $\triangleright$  and  $\triangleleft$ . As you press  $\blacktriangle$  or  $\blacktriangleleft$ , the minute display changes as follows:  
23  $\leftrightarrow$  27  $\leftrightarrow$  30  $\leftrightarrow$  37  $\leftrightarrow$  45  $\leftrightarrow$  --

As you press  $\triangleright$  or  $\triangleleft$ , the seconds increase or decrease by 10. After 50, the seconds show 00 and the minutes increase by 1.

- 6 Press EDIT.

The selections to be recorded are determined automatically. For details, see page 50.

Then the display shows **A** the last selection to be recorded, **B** total playing time, and **C** selections to be recorded.

- 7 Depress  $\bullet$ .

$\triangleright$  is depressed at the same time.

- 8 Press  $\triangleright$  on the CD player.

The recording starts.

### Note

- Up to 20th selection on the disc can be recorded. The 21st selection cannot be recorded.
- In step 5, designate the total playing time shorter than the tape length.

## To record on both sides

After step 6, press EDIT again for the reverse side and then proceed with the remaining steps.

The CD player enters the pause mode after recording on the front side.

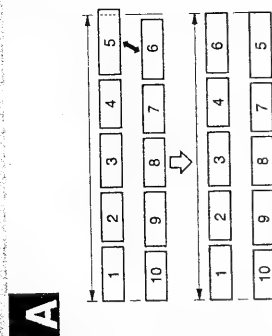
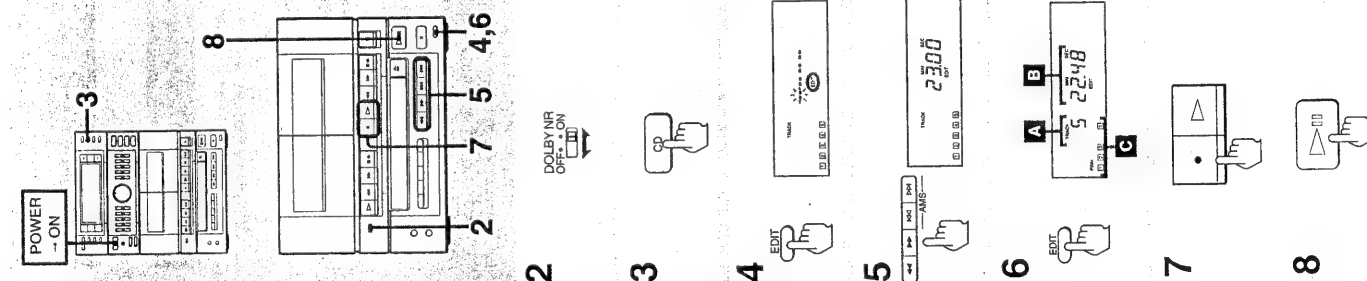
During pause, take out the cassette and reverse it. Then set the cassette deck in the recording mode and restart the CD playback.

## To record desired selections on the front side

Before pressing EDIT, program the desired selection. (See page 38.)

## How the CD player determines the selections **A**

The CD player selects the selections from the first one on the CD, adding up each playing time. When the total playing time exceeds the specified tape length, the last selection is eliminated. Then, the CD player looks for a selection whose length fits within the remaining tape and substitutes it for the eliminated one.



## Tape Dubbing (from deck A to B)

### Editing the Tape

- 1 Press TAPE of the function selector.
- 2 Insert the recorded tape in deck A and the blank tape in deck B.
- 3 Locate the beginning of the portion to be dubbed on deck A, using ◀◀ or ▶▶ and then stop the tape.  
When dubbing the whole side of the tape, skip this step.
- 4 Depress ●.  
▶ is depressed at the same time.
- 5 Press ▷ of deck A.  
Dubbing of the desired portion starts.

#### To stop dubbing

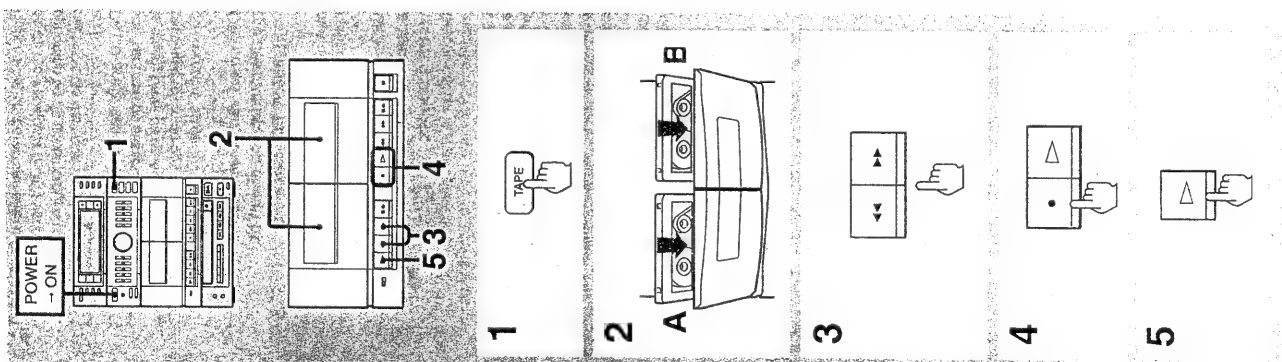
Press ■ ▲ on both decks.

#### Is it necessary to set DOLBY NR?

Yes. Set DOLBY NR according to the playback tape.

#### Is it possible to listen to program sources other than tape during dubbing?

No. The source changes to that of the function selector pressed and the tape playback cannot be dubbed.



## Timer-activated Operation

The power can be turned on and off automatically so that you can wake up to music, etc.

Recording or tape playback cannot be activated by the timer.

The preset timer-on and -off time remain until you reset them or the power cord is disconnected.

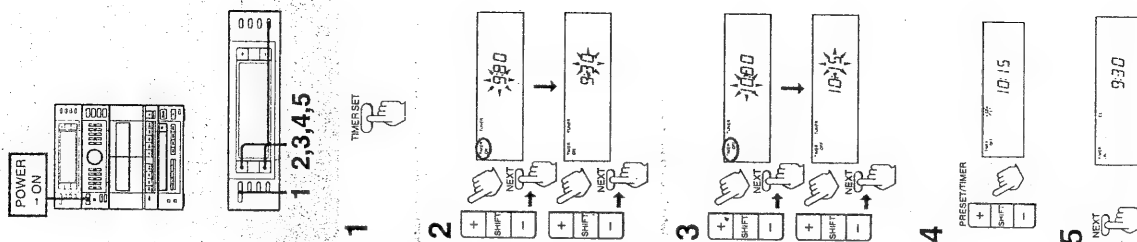
### Before setting the timer

- Make sure the clock is set correctly. (See page 20.)

### Timer Setting

The illustrations show an example in which the system turns on at 9:30 and off at 10:15.

- 1 Press **TIMER SET**.  
TIMER ON appears and a figure indicating the hour flashes.
- 2 Set the hour and minute of the timer-on time with **PRESET/TIMER +** or **-**, and **NEXT**.  
TIMER OFF appears and a figure indicating the hour flashes.
- 3 Set the hour and minute of the timer-off time with **PRESET/TIMER +** or **-**, and **NEXT**.  
The program source flashes.
- 4 Select the program source with **PRESET/TIMER +** or **-**.  
As you press **+** or **-**, the source changes:  
TUNER ↔ CD
- 5 Press **NEXT**.
- 6 Prepare for the source: selecting a preset station (see page 28), inserting the disc.
- 7 Press **POWER** to turn off the system.  
Make sure that **TIMER** is on.  
At the timer-on time, the system turns on automatically.





### To change the time and program

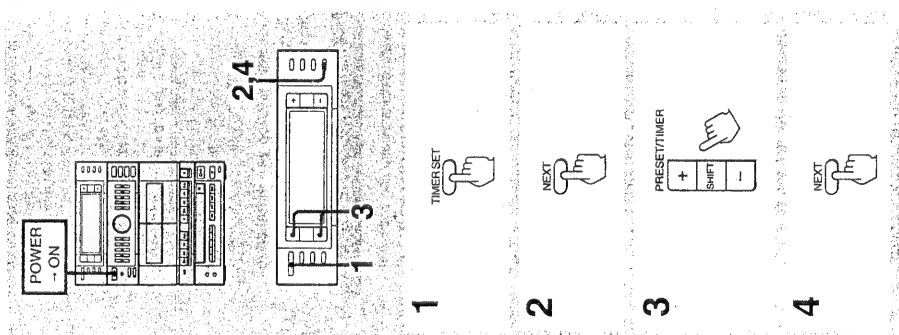
- 1 Press TIMER SET.**  
The timer-on hour flashes.
- 2 Press NEXT until the item to be changed flashes.**
- 3 Press PRESET/TIMER + or - until the desired time or source appears.**

- 4 Press NEXT until TIMER ON time appears.**  
The display, then shows TIMER OFF time, and returns to the previous display.

### When you do not want to operate the timer program

Press TIMER CONTROL to turn off TIMER. To reactivate the timer, press TIMER CONTROL to display TIMER.

When the power is already on at the preset time the function mode will be automatically changed to the preset one, even if you are playing a program of another function.



## Sleep Timer Operation

By setting the sleep timer, the system power can be turned off after the preset duration.

### Sleep Timer Setting

(Possible only with the remote commander)

- 1 Play the desired program source.**

- 2 Press SLEEP to select the desired duration in minutes.**

As you press SLEEP, the indication changes as follows:

90 → 80 → ... 10 → --

#### Note

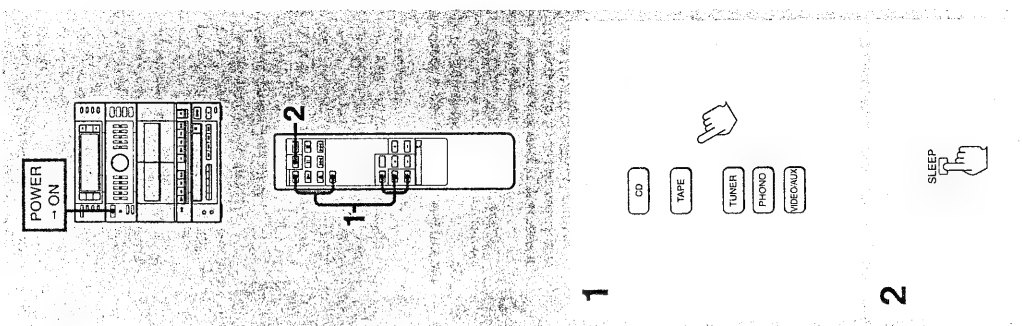
For tape playback, be sure to select a duration longer than the tape length.

**To turn off the system before the preset time of the sleep timer**  
Press POWER.

**To check the remaining time of the sleep timer**

Press SLEEP once, and the remaining time appears.

The display returns to the previous indication after several seconds.



## Maintenance

### Cleaning the Heads and the Tape Paths **A**

Clean after every 10 hours of operation and before recording for optimum record/playback quality.

- 1 Press **■** to open the cassette holders.
- 2 Slightly moisten the tip of a cotton swab with cleaning fluid or alcohol.
- 3 Wipe the parts shown in the illustration:

- a** Capstan
- b** Record/playback head
- c** Erase head
- d** Pinch roller

Do not insert a cassette until cleaned areas are completely dry.

### Demagnetizing the Heads

After 20 to 30 hours of use, it is necessary to remove residual magnetism built up on the heads using any commercially available demagnetizer.

For the demagnetizing procedure, refer to the instruction manual of the demagnetizer.

### Cleaning Discs **B**

When a disc becomes dirty, clean it with a cleaning cloth. Wipe the disc from the center out.

Do not use solvents such as benzene, thinner, commercially available cleaners, or anti-static spray intended for analog discs.

### Cleaning the Cabinet

Use a soft cloth slightly moistened with mild detergent solution.

## Microphone Mixing

### Mixing Operation

- 1 Connect the microphone to MIX MIC jack.
- 2 Select program source with the function buttons and play it.
- 3 Sing or speak into the microphone.
- 4 Adjust the total volume.

When the mixing is over

Be sure to disconnect the microphone.

### Recording the Sound Mixed with a Source

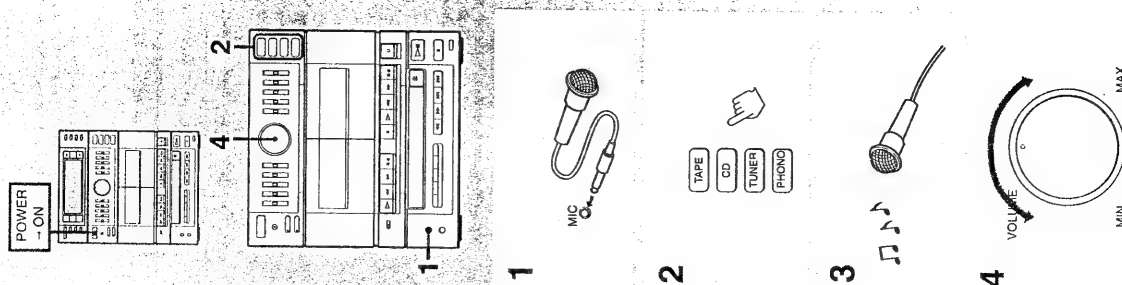
- 1 Mix the sound as described above.
- 2 Insert a tape in deck B.
- 3 Set deck B to record mode.

### Recording from a Microphone Only

- 1 Press CD.
  - 2 Press **■** of the CD player.
  - 3 Insert a tape in deck B.
  - 4 Depress **●**.
- ▷ is depressed at the same time.  
Recording starts.
- 5 Speak or sing into the microphone.

To stop howling (acoustic feedback)

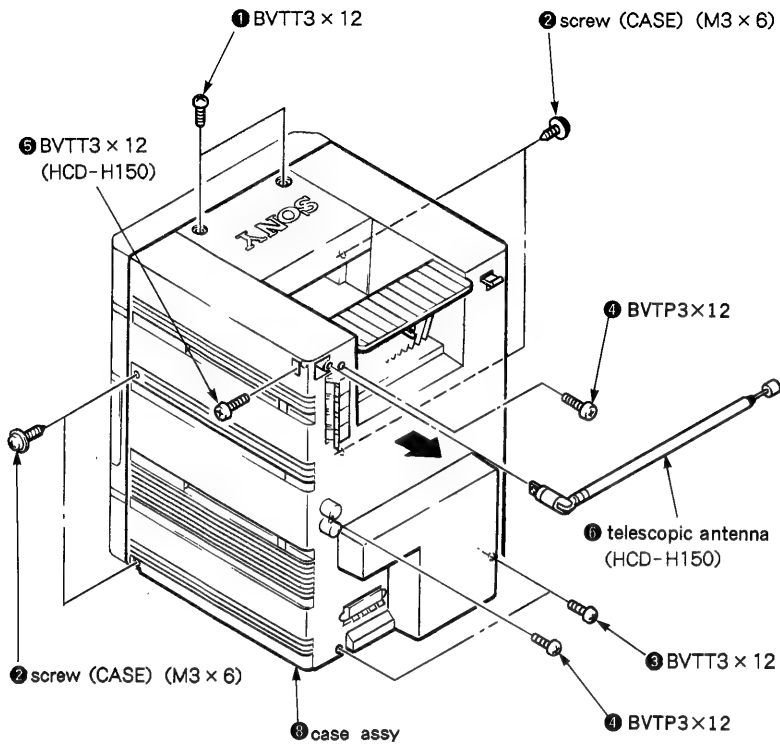
Placing the microphone too close to the speakers may cause howling. Move the microphone away from the speakers or change the direction it faces.



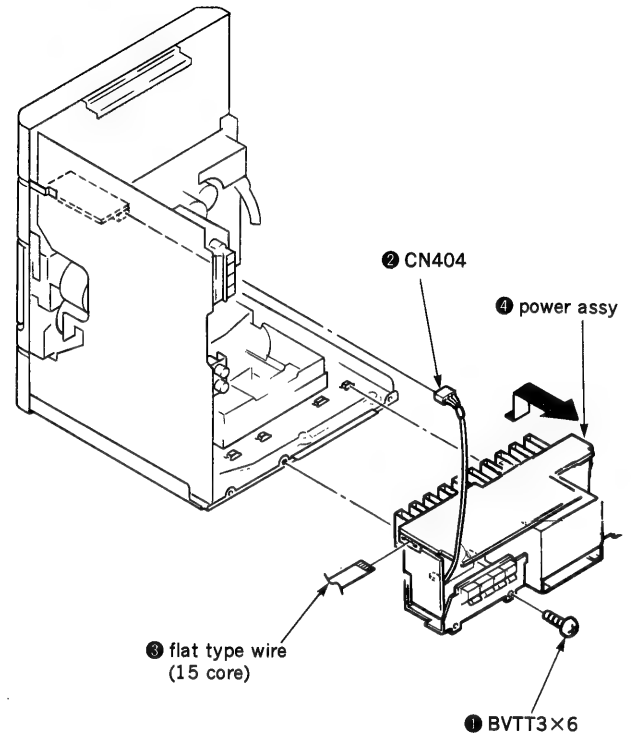
## SECTION 3 DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

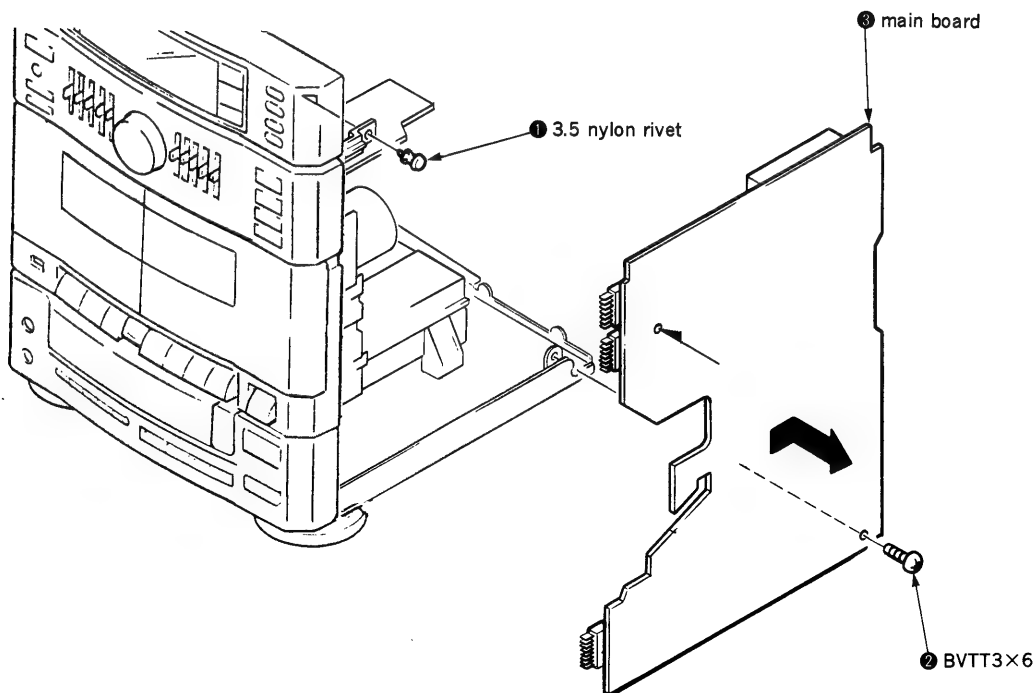
### 3-1. CASE ASSY



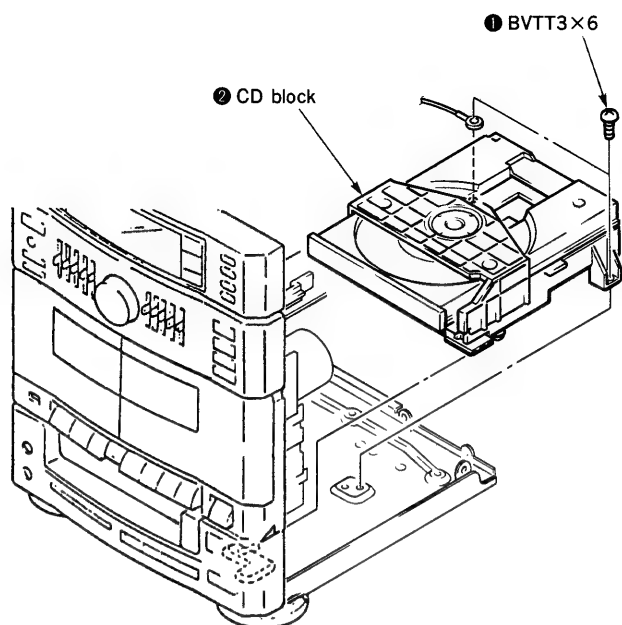
### 3-2. POWER ASSY



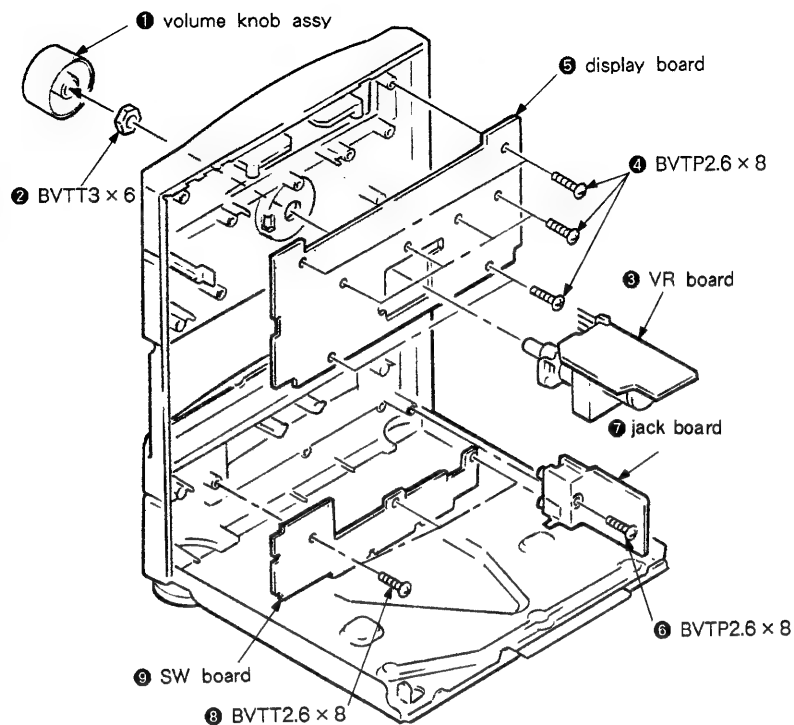
### 3-3. MAIN BOARD



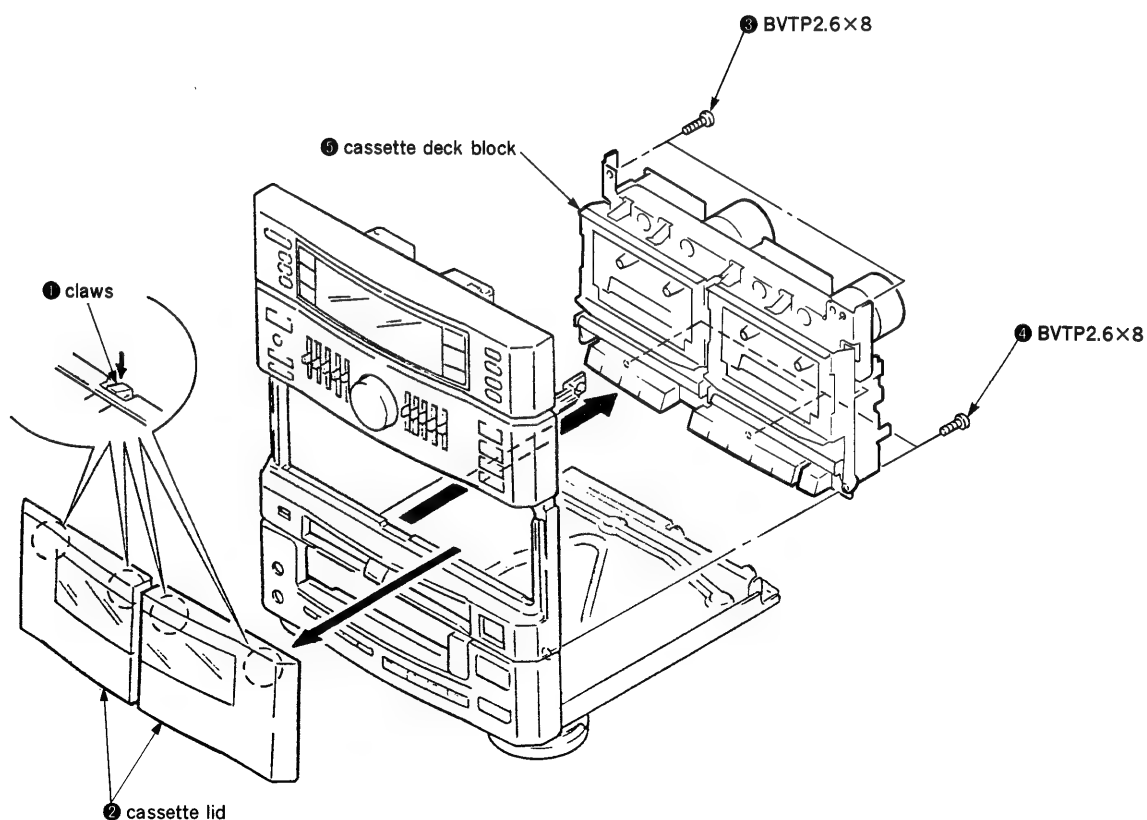
### 3-4. CD BLOCK



### 3-6. VR, DISPLAY, JACK, SW BOARDS



### 3-5. CASSETTE DECK BLOCK



## SECTION 4 MECHANICAL ADJUSTMENTS

### PRECAUTION

- Clean the following parts with a denatured alcohol-moistened swab :
 

record/playback head	pinch roller
erase head	rubber belt
capstan	idler
- Demagnetize the record/playback head with a head demagnetizer.  
(Head demagnetizer do not approach for the erase head.)
- Do not use a magnetized screwdriver for the adjustment.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustment should be performed with the rated power supply voltage unless otherwise noted.

### • Torque Measurement

	Torque meter	Meter reading
Forward	CQ-102C	35 to 60 g·cm (0.49 to 0.83 oz·inch)
REV	RB	
Forward back tension	CQ-201C	2.5 to 4.5 g·cm (0.035 to 0.062 oz·inch)
REV	RB	
FF	CQ-102C	75 to 150 g·cm (1.04 to 2.08 oz·inch)
REW		

### Note:

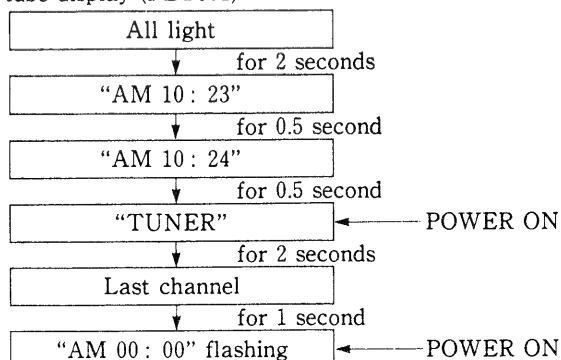
G : Germany model	EE : East European model
JE : TOURIST model	EA : Saudi Arabia model
IT : Italian model	AUS : Austrian model
CND : Canadian model	

### • Timer Test Mode

When BAND, SHIFT and PRESET/TIMER+ buttons are pressed at the same time the following time test operation is performed. After the operation, it becomes in the system reset mode. Take care that the frequency preset to the tuner is initialized.

- POWER OFF
- Timer set    Clock        AM10: 23  
                   Timer ON    AM10: 24  
                   Timer OFF   AM10: 31  
                   Function    TUNER

- FL tube display (FLT501)



- Finish

## SECTION 5 ELECTRICAL ADJUSTMENTS

### DECK SECTION

- The adjustment should be performed in the publication.  
(Be sure to make playback adjustment at first.)
- The adjustment and measurement should be performed for both L-CH and R-CH.
  - Switch position  
DOLBY NR switch : OFF

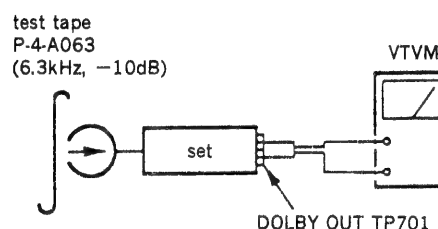
### • Test Tape

Tape	Contents	Use
P-4-A063	6.3kHz, -10dB	Head Azimuth Adjustment
WS-48A	3kHz, 0DB	Tape Speed Adjustment
P-4-L300	315Hz, 0DB	Playback Level Adjustment

### Record/Playback Head Azimuth Adjustment

#### Procedure :

- Mode : playback DECK A DECK B



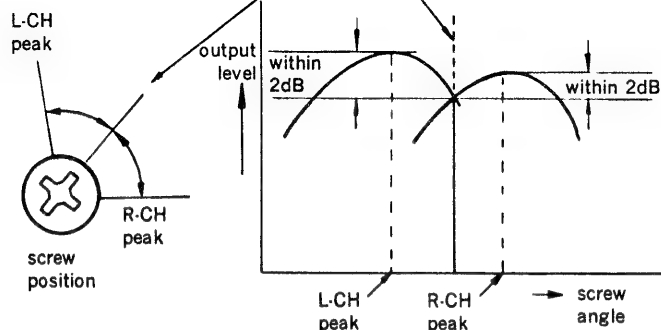
### • Preset Frequency in Restting

When pressing the system reset button (S701) of the rear side of the unit, the following frequency is preset to the tuner part. When the system reset is performed in repairing, be sure to return to the frequency set by the user.

FM	US, Canadian model MW tuning interval : 10k (9k)		AEP, UK, G, EE, model ( ) : IT model	
	AM	MW	LW	
A1 87.5MHz	A6 530(531)kHz	A6 531(522)kHz	B1 153(144)kHz	
A2 88.0MHz	A7 620(621)kHz	A7 603kHz	B2 162kHz	
A3 98.0MHz	A8 1050(1053)kHz	A8 999kHz	B3 216kHz	
A4 106.0MHz	A9 1490(1485)kHz	A9 1404kHz	B4 270kHz	
A5 108.0MHz	A10 1710kHz	A10 1602(1611)kHz	B5 279(288)kHz	

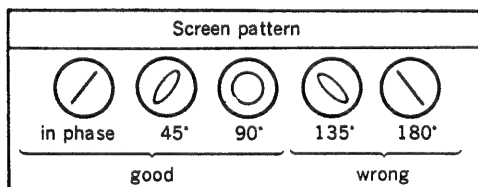
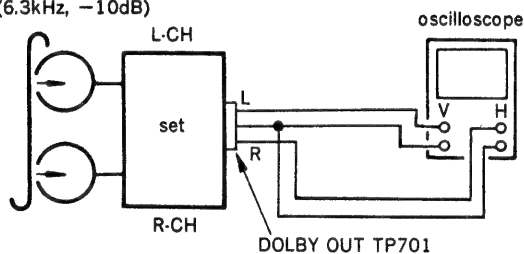
FM	E, EA, AUS, JE model MW tuning interval : 9k (10k)	
	MW	SW
A1 87.5MHz	A6 531(530)kHz	B1 5.95MHz
A2 88.0MHz	A7 603(620)kHz	B2 7.00MHz
A3 98.0MHz	A8 999(1050)kHz	B3 12.00MHz
A4 106.0MHz	A9 1404(1490)kHz	B4 17.00MHz
A5 108.0MHz	A10 1602(1710)kHz	B5 17.90MHz

2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 2dB.



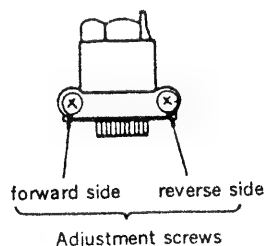
### 3. Playback Mode

test tape  
P-4-A063  
(6.3kHz, -10dB)



4. Change the review playback mode and repeat the steps 1 to 3.  
5. After the adjustment, lock the adjustment screw with suitable locking compound.

### Adjustment Location :



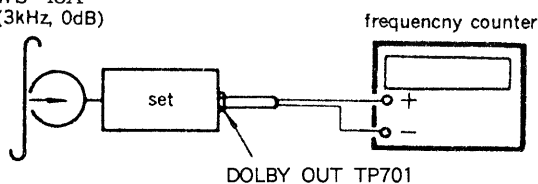
### Tape Speed Adjustment DECK A DECK B

#### Procedure :

- Perform high speed adjustment before normal speed adjustment.

Mode : playback

test tape  
WS-48A  
(3kHz, 0dB)

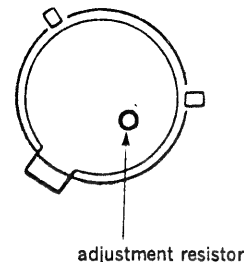


Speed checker	Digital frequency counter
$\pm 1\%$	2,970 to 3,030Hz

Frequency difference between the beginning and the end of the tape should be within 1% (30Hz).

### Adjustment Location :

motor  
deck A: M1  
deck B: M2

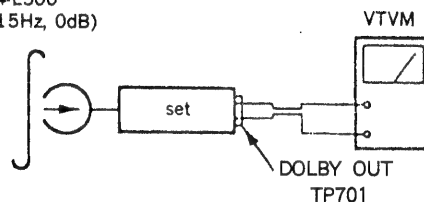


### Playback Level Adjustment DECK A DECK B

#### Procedure :

Mode : playback

test tape  
P-4-L300  
(315Hz, 0dB)



Deck A is RV601 (L-CH), and RV651 (R-CH), deck B is RV611 (L-CH), and RV661 (R-CH) so that adjustment within adjustment level as follows.

### Adjustment Level :

DOLBY OUT level :  $-5.7 \pm 0.5$  dBs

Level Difference between Channels : within 1dB

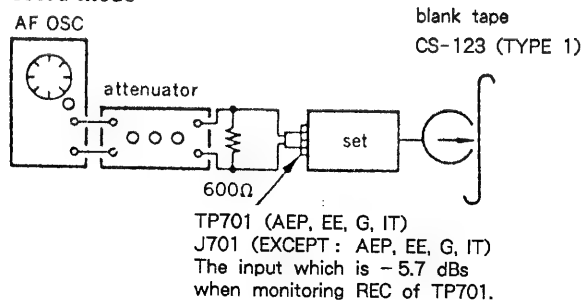
Confirm the DOLBY OUT level does not change in playback mode while changing the mode from playback to stop several times.

### Adjustment Location : main board

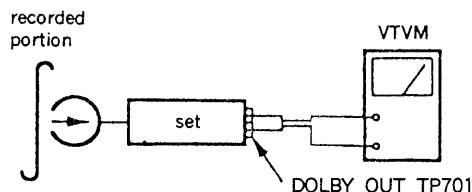
### Record Level Adjustment DECK B

#### Procedure :

1. record mode



2. playback mode



Confirm playback the signal recorded in step 1 become adjustment level as follows.

If these levels do not adjustment level, adjustment the RV721 (L-CH) and RV722 (R-CH) to repeat step 1 and 2.

#### Adjustment Level :

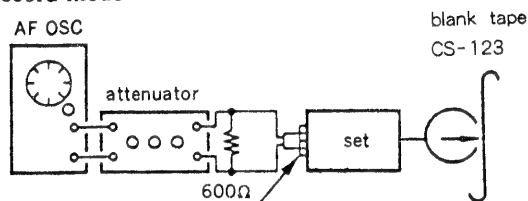
DOLBY OUT level :  $-25.7 \pm 1.0$  dBs

Adjustment Location : main board

### Record Bias Adjustment DECK B

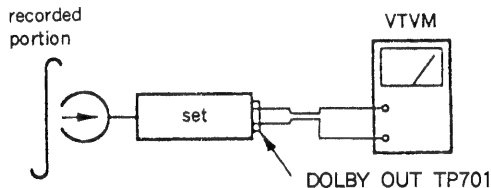
#### Procedure :

1. record mode



TP701 (AEP, EE, G, IT)  
J701 (EXCEPT: AEP, EE, G, IT)  
The input which is  $-5.7$  dBs when monitoring REC of TP701.

2. playback mode



Confirm playback the signal recorded in step become adjustment level as follows.

If these levels do not adjustment level, adjustment the RV701 (L-CH) and RV751 (R-CH) to repeat step 1 and 2.

#### Adjustment Level :

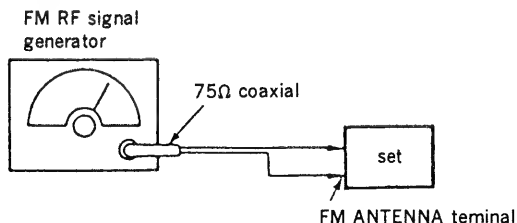
DOLBY OUT level :  $-25.7 \pm 1.0$  dBs

Adjustment Location : main board

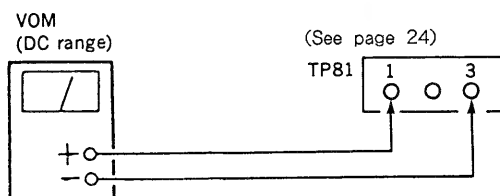
### TUNER SECTION

#### FM SECTION ADJUSTMENTS

##### Setting :



Carrier frequency : 98MHz ( $60\text{dB}\mu$  : 1mV)  
Modulation : 1kHz, 75kHz deviation (EXCEPT : G,IT)  
1kHz, 40kHz deviation (G,IT)



(See page 24)

#### FM Discriminator Alignment (NULL Check)

Band : FM

##### Procedure :

1. Supply a  $60\text{dB}\mu$  (1mV) 98MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust IFT82 for 0V reading on the VOM.

Note : FM tuned indication lighting level adjustment should be made after FM discriminator alignment.

#### FM Tuned Indication Lighting Level Adjustment

Band : FM

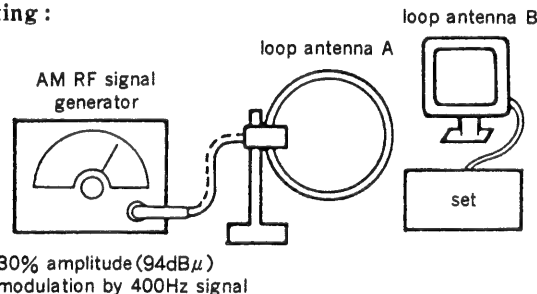
##### Procedure :

1. Supply a  $23 \pm 2\text{dB}\mu$  ( $14.1 \pm 1.2\mu\text{V}$ ) (EXCEPT : G, IT),  $20 \pm 2\text{dB}\mu$  ( $10 \pm 1.2\mu\text{V}$ ) (G, IT) 98MHz signal from the ANTENNA terminal.
2. Tune the set to 98MHz.
3. Adjust RV81 so that the TUNED light up.

Adjustment Location : main board (See page 24)

#### AM SECTION ADJUSTMENTS

##### Setting :



#### MW (AM) Tuned Indication Lighting Level Adjustment

Band : MW or AM

##### Procedure :

1. Set loop antenna A so that the loop antenna B input level become  $55\text{dB}\mu \pm 4\text{dB}\mu$  ( $0.36 \sim 0.89\text{mV}$ ).
2. Tune the set to 1,404kHz (EXCEPT : US, CND), 1,490kHz (US, CND).
3. Adjust the RV82 so that the TUNED light up.

#### SW OSC Voltage Adjustment

(E, Saudi Arabia, Australian, JE model)

Band : SW

##### Procedure :

1. Connect the VOM to TP (OSC).
2. Tune the set to 5.95MHz.
3. Adjust T2 for 0.9 to 1.1V reading on the VOM.
4. Tune the set to 17.90MHz.
5. Adjust CT22 for 8.3 to 8.7V reading on the VOM.

#### SW Tracking Adjustment

(E, Saudi Arabia, Australian, JE model)

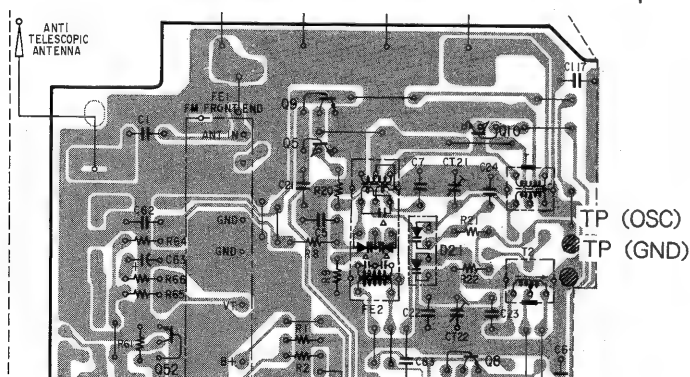
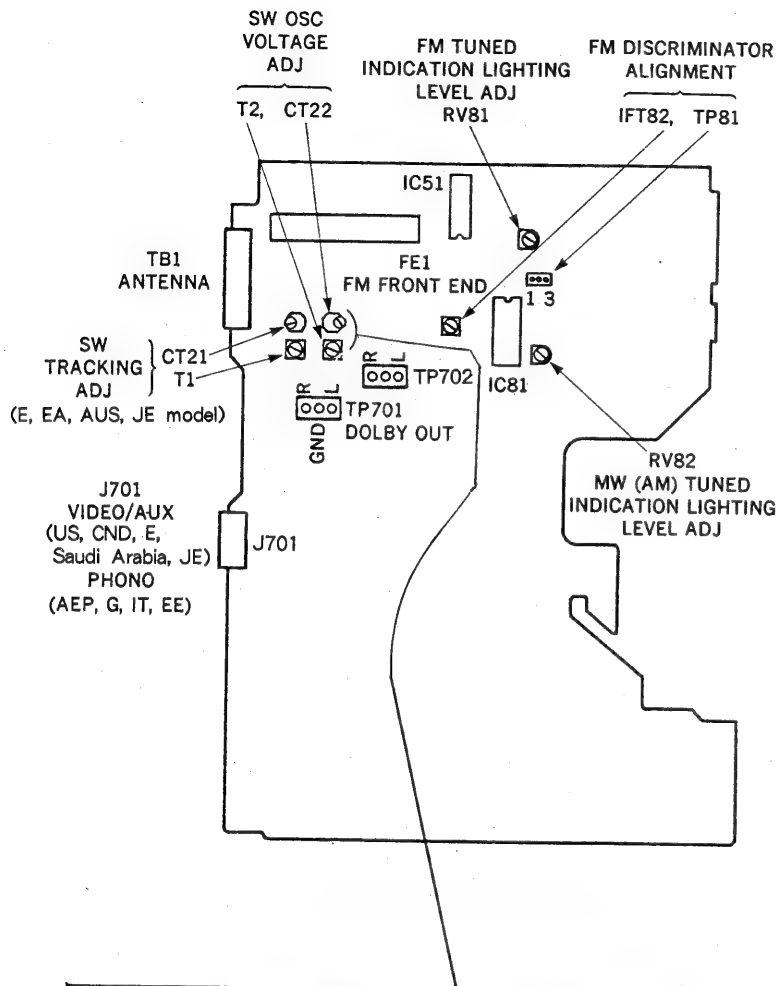
Band : SW

##### Procedure :

1. Connect the VOM to speaker terminal.
2. Adjust for a maximum reading on VTVM.

Signal generator and set frequency	Adjustment part
7.0MHz	T1
17.0MHz	CT21

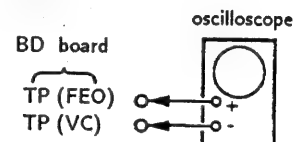
Adjustment Location : main board —component side—



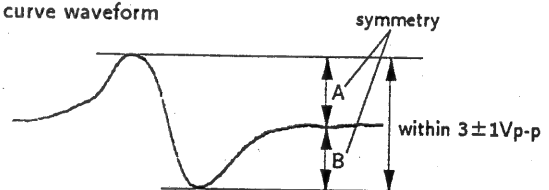
**Note:** JE : Tourist model  
 CND: Canadian model  
 EE : East European model  
 EA : Saudi Arabia model  
 AUS: Australian model  
 G : Germany model  
 IT : Italian model

**CD SECTION****Note :**

1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than  $10M\Omega$  impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

**S Curve Check****Procedure :**

1. Connect oscilloscope to test point TP (FEO) on BD board.
2. Connect between test point TP (FES) and TP (VC) by lead wire.
3. Turned Power switch on and actuate the focus serch. (actuate the focus serch when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within  $3\pm 1V_{p-p}$ .

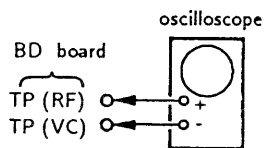
**S curve waveform**

5. After check, remove the lead wire connected in step 2.

**Note :** • Try to mesure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.  
 • Take sweep time as long as possible and light up the brightness to obtain best waveform.



## RF Level Check

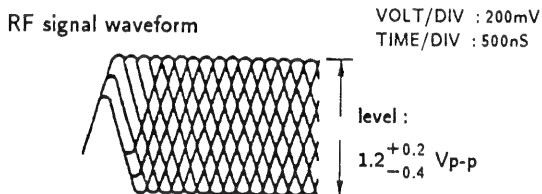


### Procedure :

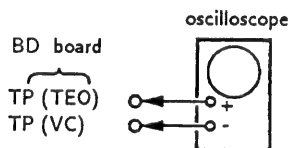
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

### Note :

Clear RF signal waveform means that the shape “◇” can be clearly distinguished at the center of the waveform.

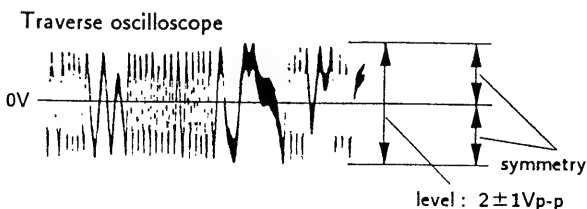


## E-F Balance Check



### Procedure :

1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

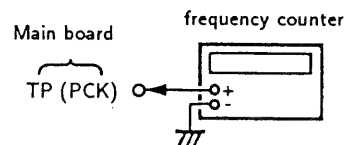


6. Remove the lead wire connected in step 1.

## RF PLL Free-run Frequency Check

### Procedure :

1. Connect frequency counter to test point (PCK) with lead wire.



2. Turn Power switch on.
3. Confirm that reading on frequency counter is 4.3218MHz.

## Focus/Tracking Gain

This gain has a margin, so even if it is slightly off. There is no problem.

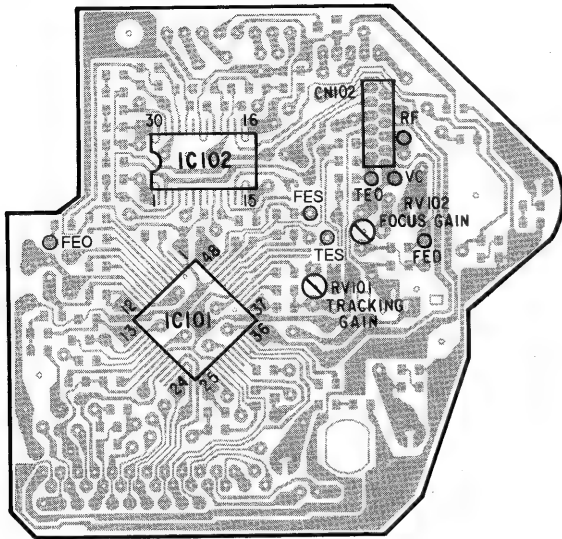
Therefore, do not perform, this adjustment.

Please note that it should be fixed to mechanical center position when you moved and do not know original position.

## SECTION 6 DIAGRAMS

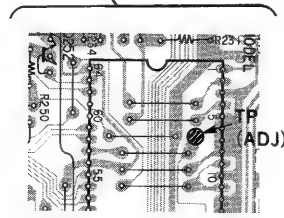
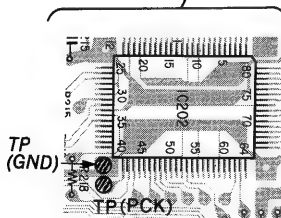
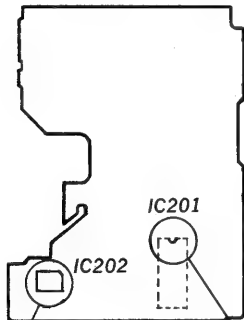
### Adjustment Locations :

BD board — conductor side —



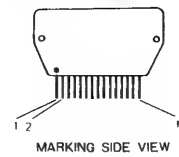
main board — conductor side —

[MAIN BOARD]



### 6-1. SEMICONDUCTOR LEAD LAYOUTS

STK-4122MK2



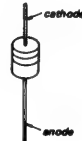
2SK246-GR3  
2SK246-Y



DTA114ES  
DTA144ES  
DTC114ES  
DTC143TS  
2SC2603-EF  
2SC2724-CD  
2SC3622A-LK



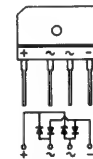
HZSB1L  
HZS7B3L  
UZ-4.7BSC  
UZL-9HI  
1N4148M  
1SS120  
11ES2



DTC114TS  
DTC144ES  
2SA1175-HFE



RBA-402



DTC144EK  
2SB1094-LK  
2SD2012



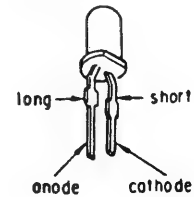
UZP-5.1BC



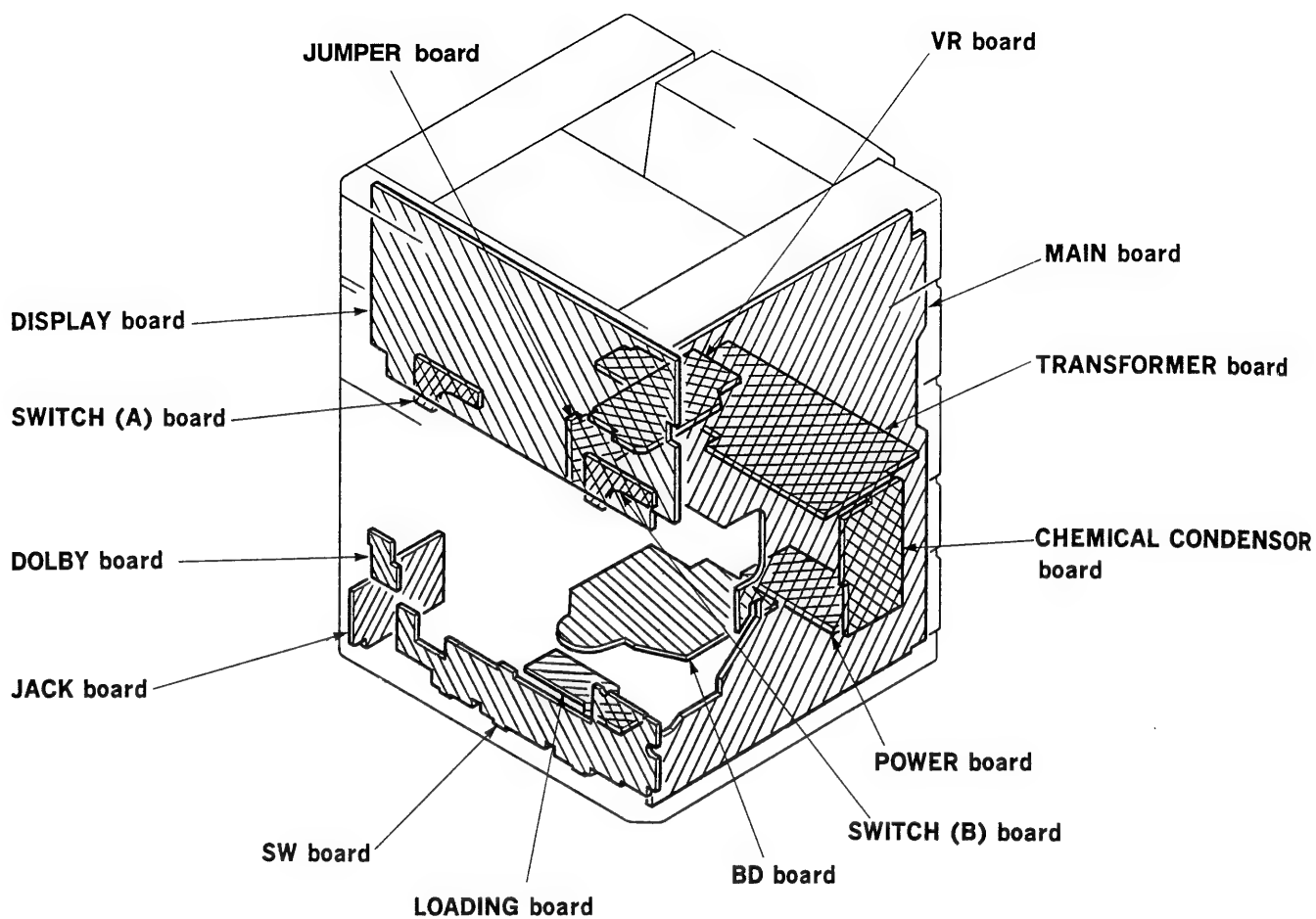
2SC3112-B  
2SD1387  
2SD1616A-K



SEL2810A



## 6-2. CIRCUIT BOARDS LOCATION





• Semiconductor Location

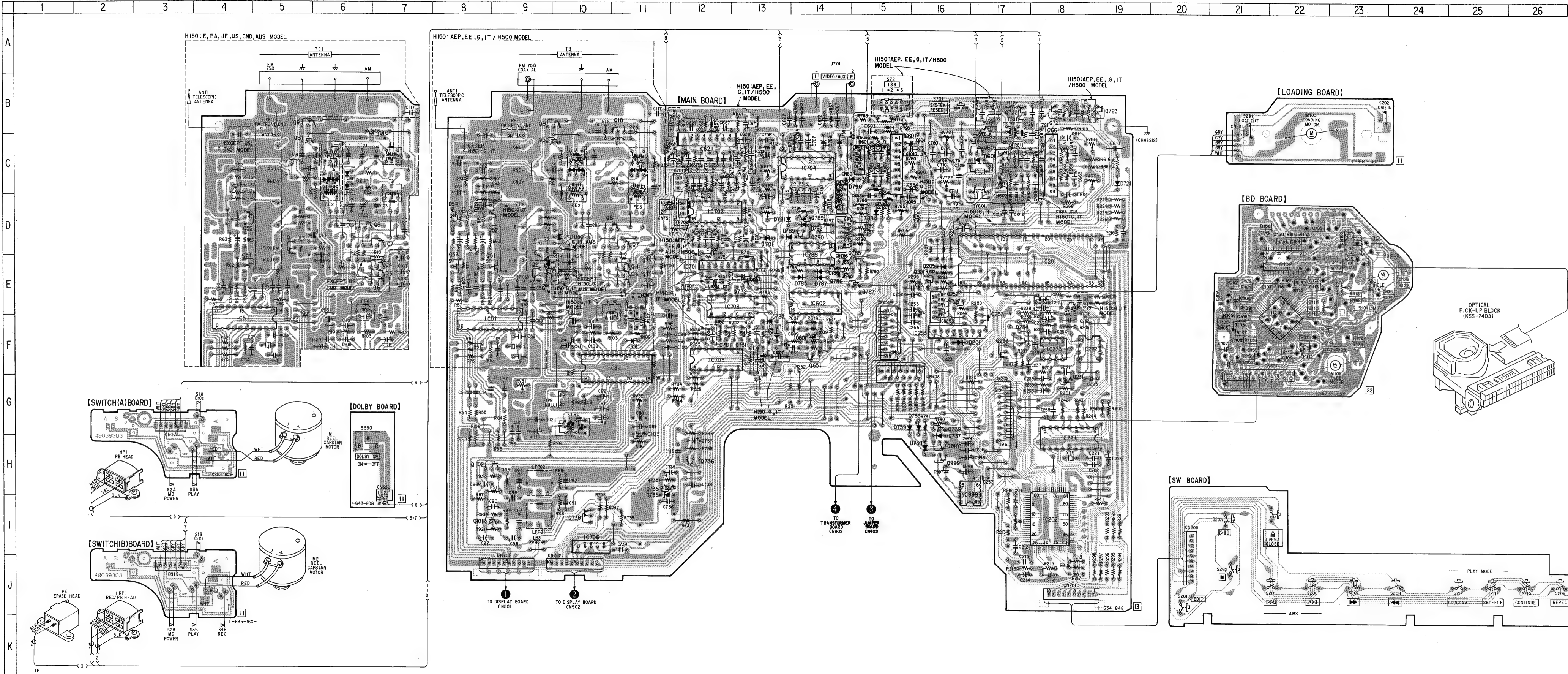
Ref. No.	Location	Ref. No.	Location
D21 (*1)	C-6	Q4 (*2)	D-4
D201	F-16	Q5 (*1)	B-5
D205	D-15	Q5 (*2)	B-9
D601	C-16	Q6 (*1)	E-6
D701	D-12	Q6 (*2)	E-10
D721	C-18	Q7 (*1)	D-6
D735	H-11	Q7 (*2)	D-10
D736	G-15	Q8 (*1)	D-6
D737	D-15	Q8 (*2)	D-10
D738	G-15	Q9 (*1)	B-5
D739	G-15	Q9 (*2)	B-9
D785	E-13	Q10 (*1)	B-6
D786	E-14	Q10 (*2)	B-10
D787	E-13	Q51 (*3)	D-4
D788	D-14	Q51 (*2)	D-8
D789	D-13	Q52 (*3)	A-4
D790	C-14	Q52 (*2)	D-6
D791	D-13	Q53 (*2)	D-7
D792	D-13	Q54 (*2)	C-7
D793	E-13	Q101 (M0)	F-21
		Q101	I-8
		Q102	H-8
		Q103	G-11
		Q201	E-15
		Q231	F-17
		Q232	F-17
		Q233	F-16
		Q234	F-16
		Q252	E-15
		Q253	E-16
		Q601	F-13
		Q603	C-16
		Q651	F-13
		Q721	B-17
		Q722	B-16
		Q723	B-18
		Q731	F-12
		Q732	E-12
		Q735	H-11
		Q736	H-11
		Q738	H-9
		Q739	G-15
		Q740	G-15
		Q781	F-12
		Q785	D-14
		Q786	E-14
		Q787	E-14
		Q789	D-13
		Q790	D-13
		Q999	H-15
Q1 (*1)	A-5		
Q1 (*2)	D-9		
Q2 (*4)	D-9		
Q3 (*3)	E-6		
Q3 (*2)	E-10		
Q4 (*3)	D-6		

- (\* 1) : Used on H150 ; E, EA, JE, AUS model.  
(\* 2) : Used on H150 ; AEP, EE, G, IT/H500 model.  
(\* 3) : Used on H150 ; E, EA, JE, US, CND, AUS model.  
(\* 4) : Used on H150 ; G, IT model.

Note on Mounting Diagram:

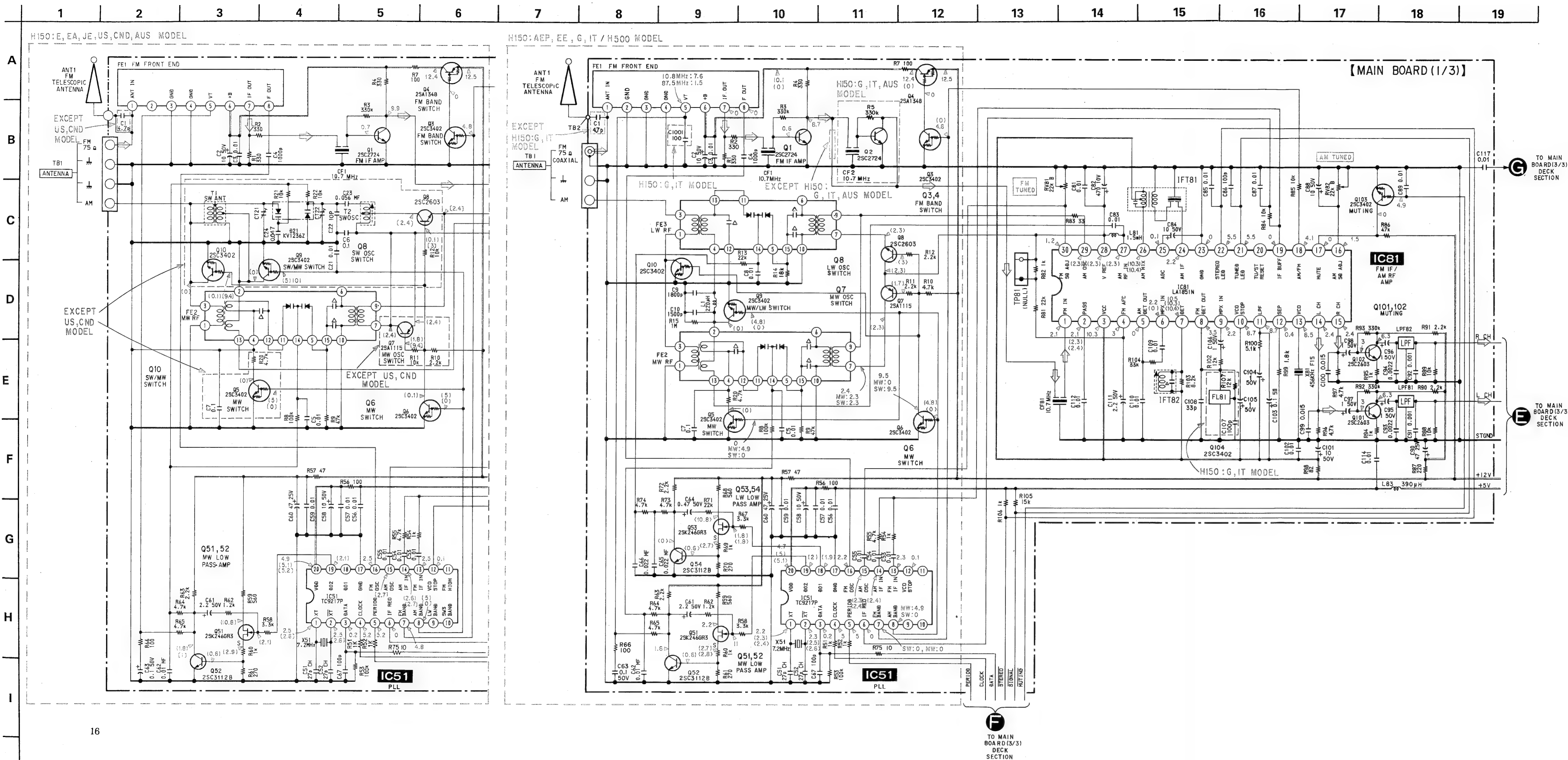
- : Parts extracted from the component side.
- : Parts extracted from the conductor side.
- ⊙ : Indicates side identified with part number.
- ⦿ : Through hole.
- ▨ : Pattern on the side which is seen.
- ▩ : Pattern of the rear side.
- EE : East European model
- EA : Saudi Arabia model
- JE : Tourist model
- AUS : Australian model
- IT : Italian model
- CND : Canadian model
- G : Germany model

6-3. PRINTED WIRING BOARDS — Tuner /CD/Deck Section — •Refer to page 26 for Semiconductor Lead Layouts.








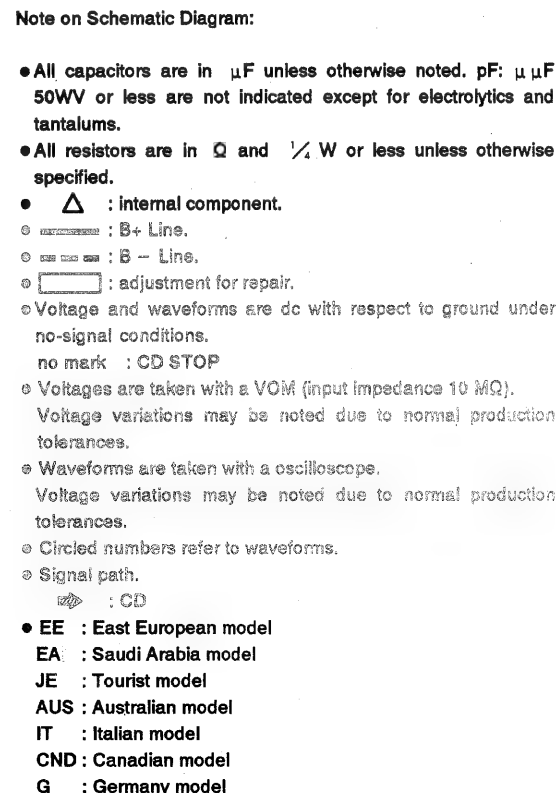
**6-4. SCHEMATIC DIAGRAM—Tuner Section—** • Refer to page 49 for IC Block Diagrams.

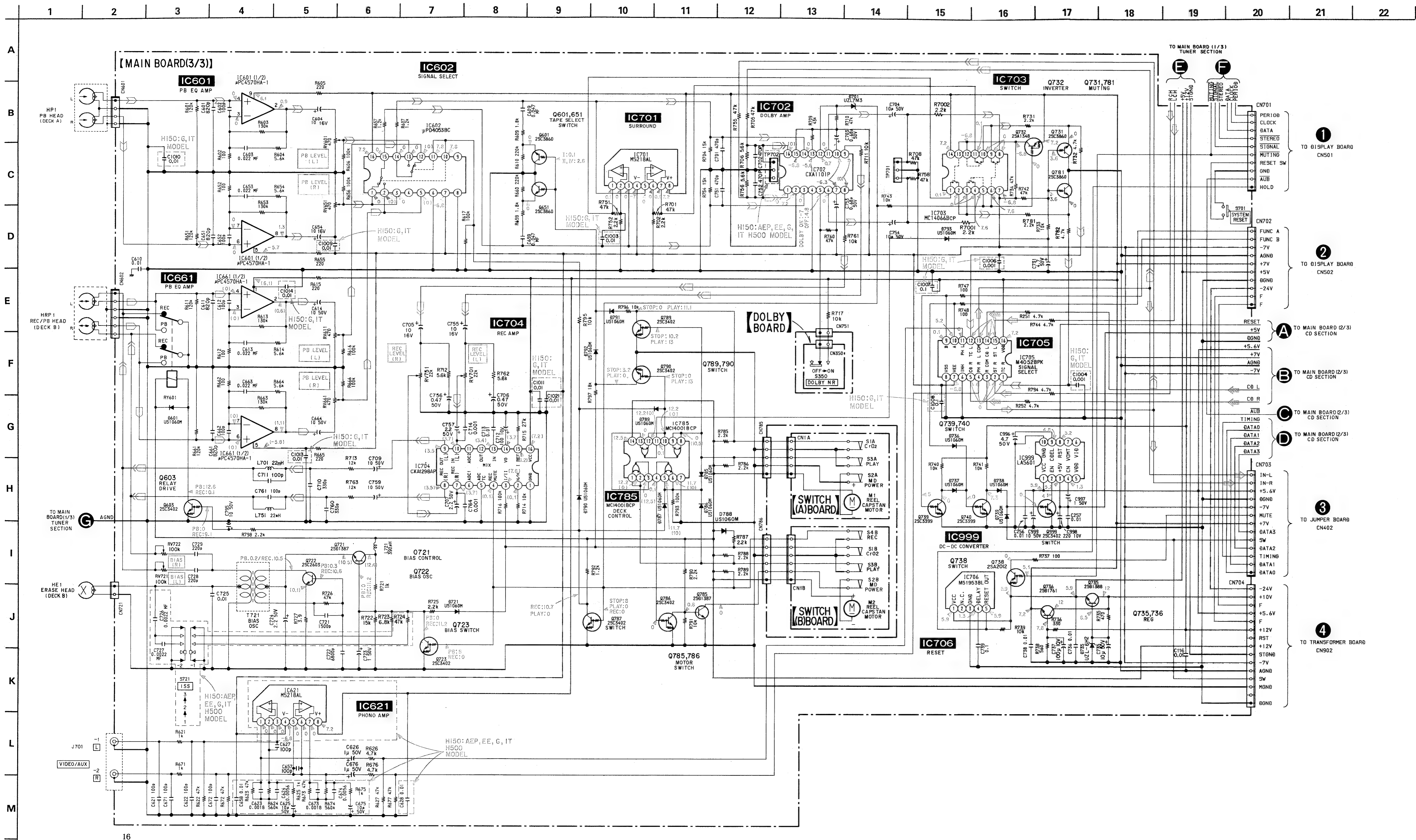


**Note on Schematic Diagram :**

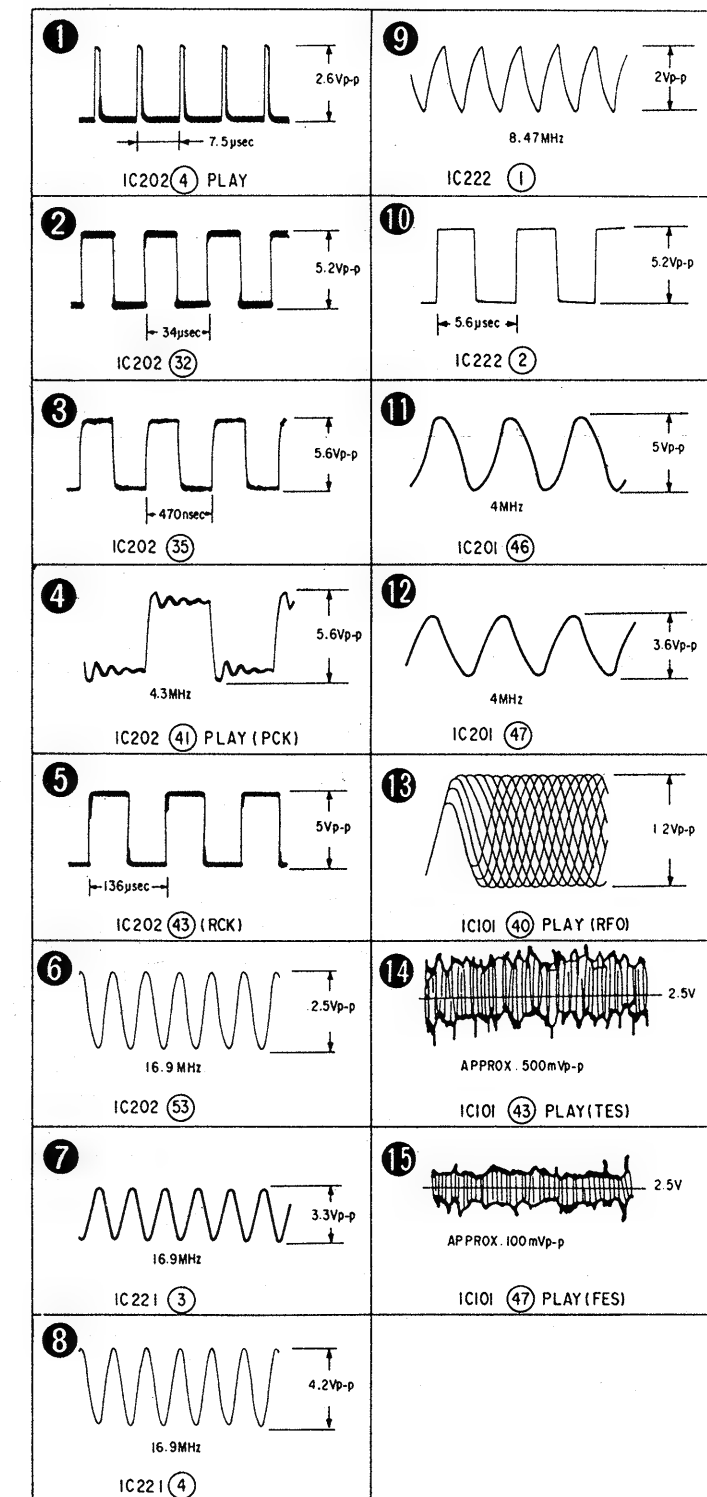
- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}$  W or less unless otherwise specified.
-  : B + Line.
-  : B - Line.
-  : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- no mark : FM
- { } : MW
- < : LW
- [ ] : SW
- Voltages are taken with a VOM (input impedance 10 M $\Omega$ ).  
Voltage variations may be noted due to normal production tolerances.
- Signal path.  
⇒ : FM
- EE : East European model
- EA : Saudi Arabia model
- JE : Tourist model
- AUS : Australian model
- IT : Italian model
- CND : Canadian model
- G : Germany model

—37—





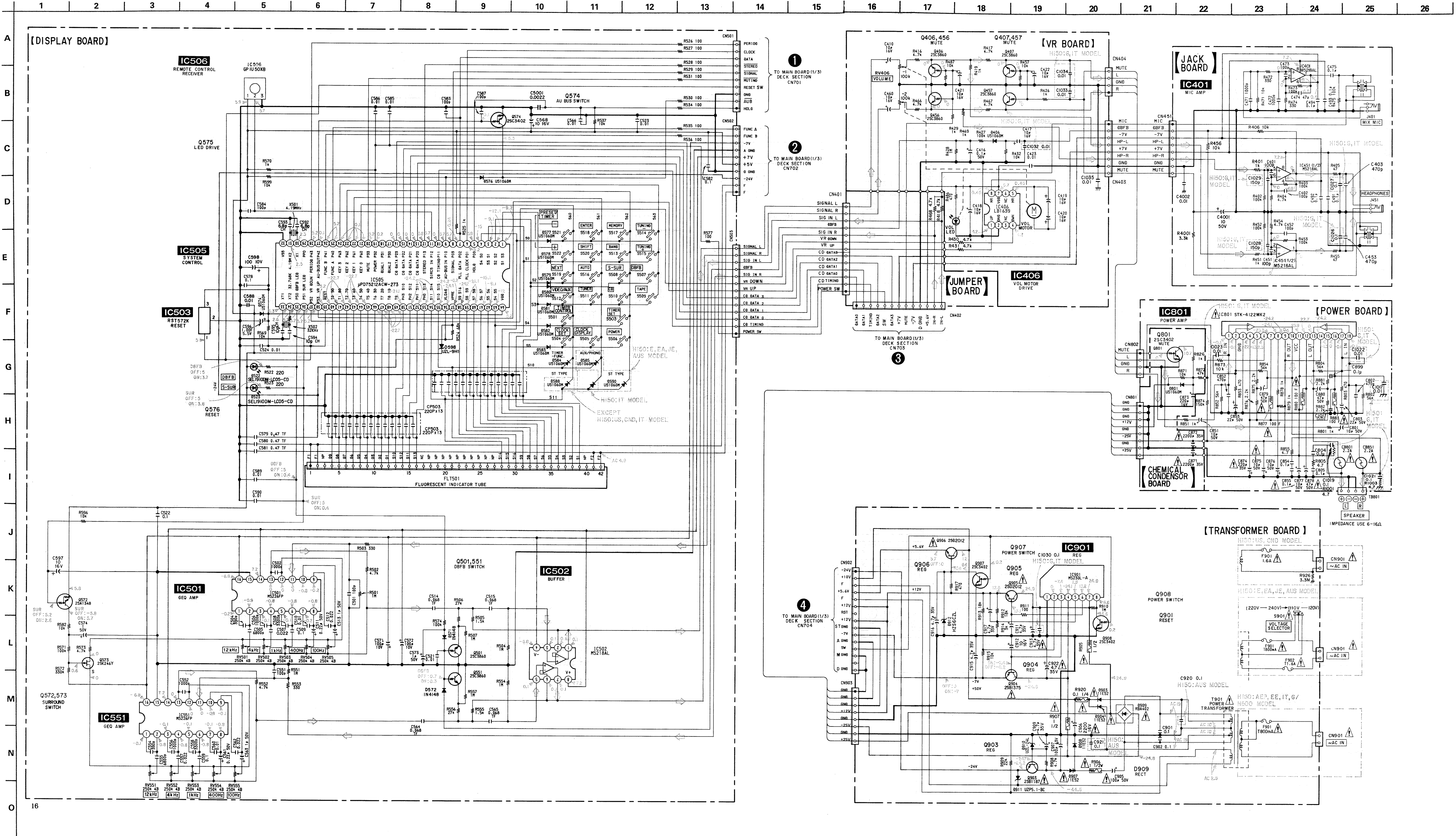
# Waveforms



## Note on Schematic Diagram:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$ ,  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{2}W$  or less unless otherwise specified.
- Signal path:
  - FM: FM
  - DECK A: DECK A
  - DECK B: DECK B
  - REC: REC
- EE: East European model
- EA: Saudi Arabia model
- JE: Tourist model
- AUS: Australian model
- IT: Italian model
- CND: Canadian model
- G: Germany model





• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D406	F-13	IC401	I-13
D522	E-2	IC406	G-13
D523	E-2	IC451	J-13
D571	E-5	IC501	E-3
D572	E-5	IC502	E-8
D574	H-8	IC503	G-6
D576	H-5	IC505	G-4
D577	G-7	IC506	F-2
D578	H-7	IC551	F-6
D579	H-7	IC801	D-14
D580	H-7	IC901	C-7
D581	H-6		
D582	H-6	Q406	G-13
D583	H-6	Q407	H-14
D584	H-2	Q456	G-13
D585 (*1)	H-3	Q457	G-14
D588 (*3)	G-3	Q501	E-5
D589 (*2)	G-3	Q551	E-6
D590 (*1)	G-3	Q572	G-2
D598	H-7	Q573	G-4
D601	C-10	Q574	H-4
D604	C-5	Q603	C-6
D607	C-6	Q604	D-6
D608	C-5	Q605	D-7
D609	A-8	Q606	D-8
D610	C-6	Q607	C-8
D612	C-8	Q608	C-7

- (\*) 1 : Used on H150; E, EA, JE, AUS model.
- (\*) 2 : Used on H150; IT model.
- (\*) 3 : Used on except H150; US, CND, IT model.

Note on Schematic Diagram:

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{2}$  W or less unless otherwise specified.
- $\square$ : fusible resistor.

Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

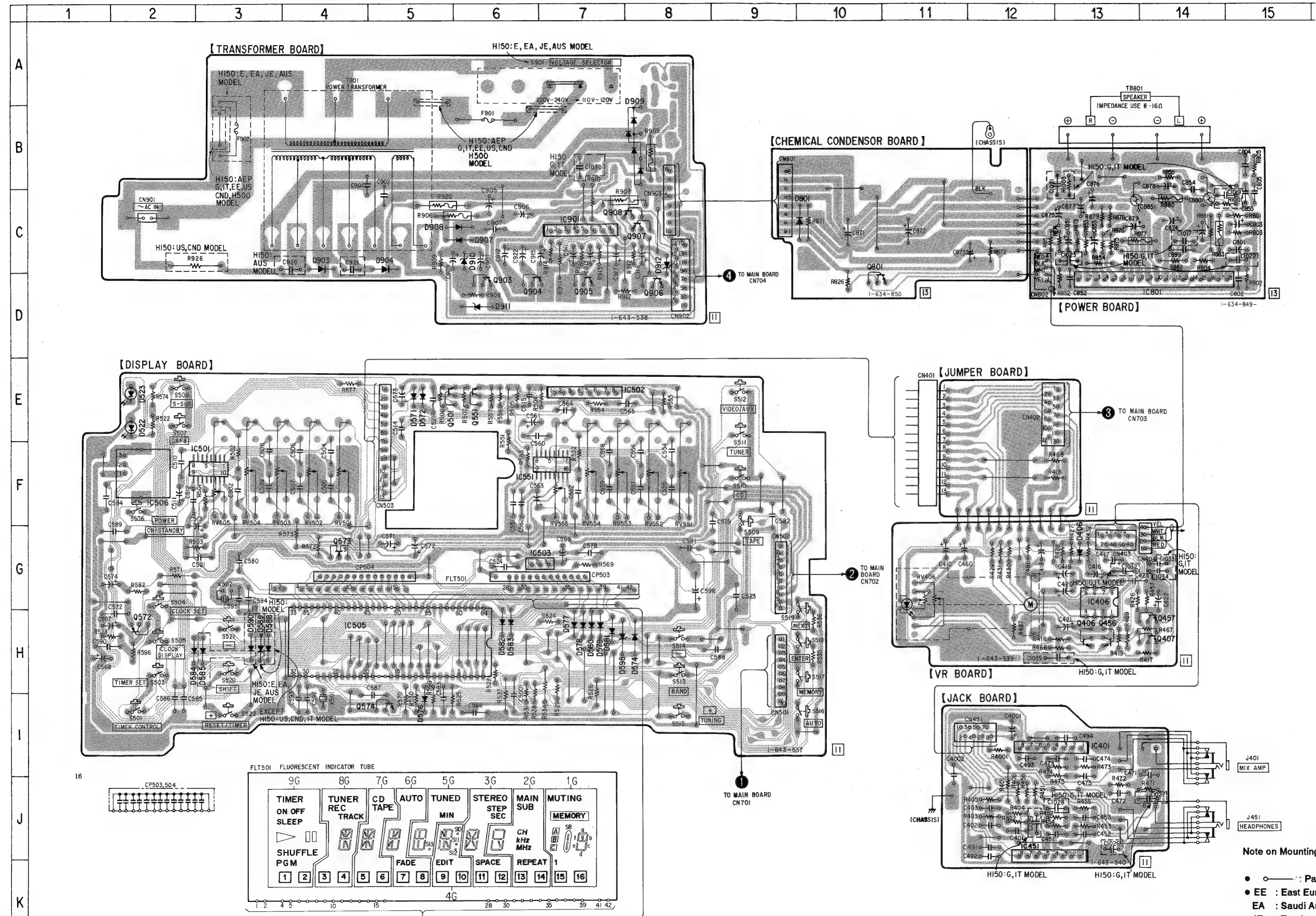
•  $\square$ : fusible résistor.

- EE : East European model
- EA : Saudi Arabia model
- JE : Tourist model
- AUS : Australian model
- IT : Italian model
- CND : Canadian model
- G : Germany model

## 6-8. PRINTED WIRING BOARDS

—Power/Amplifier/Display Section—

•Refer to page 26 for Semiconductor Lead Layouts.



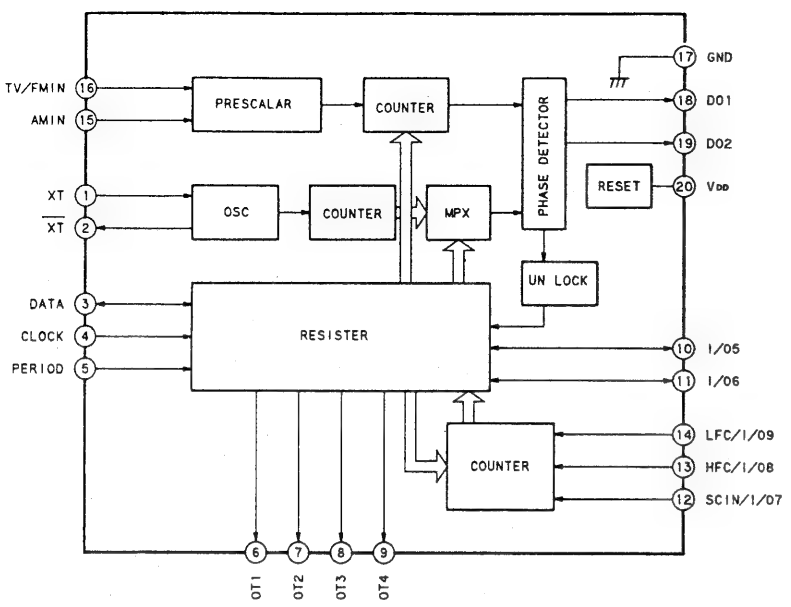
Note on Mounting Diagram:

- —○— : Parts extracted from the component side.
- EE : East European model
- EA : Saudi Arabia model
- JE : Tourist model
- AUS : Australian model
- IT : Italian model
- CND : Canadian model
- G : Germany model

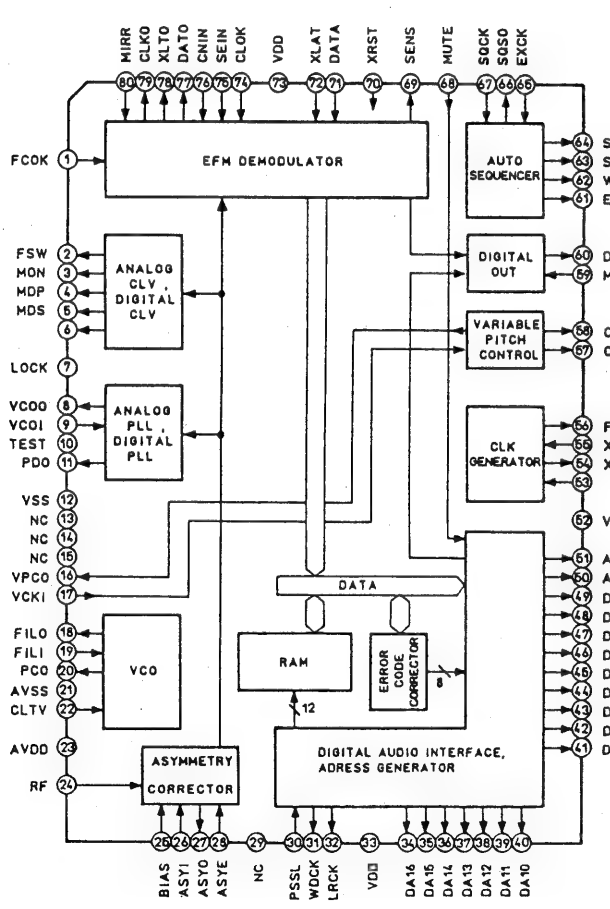


• IC Block Diagrams

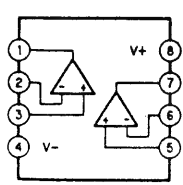
• IC51 TC9217P



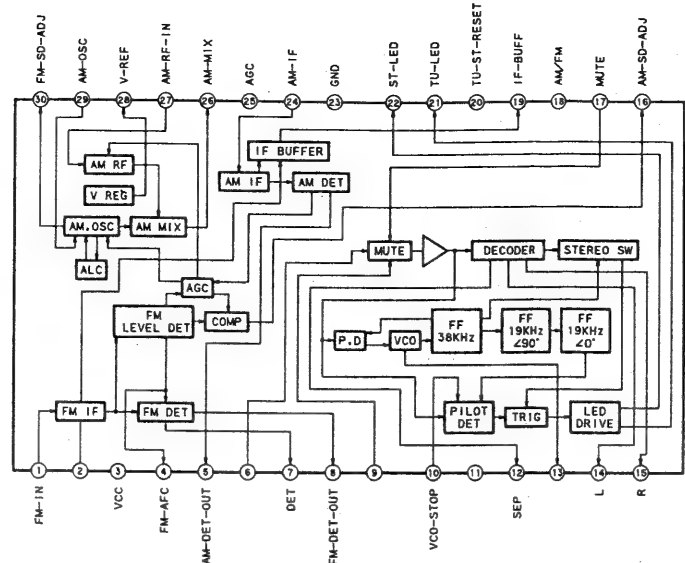
• IC202 CXD2500Q



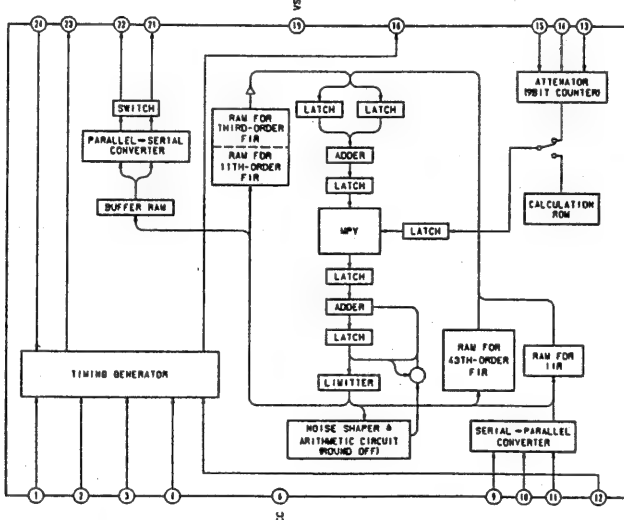
• IC223 M5218AP



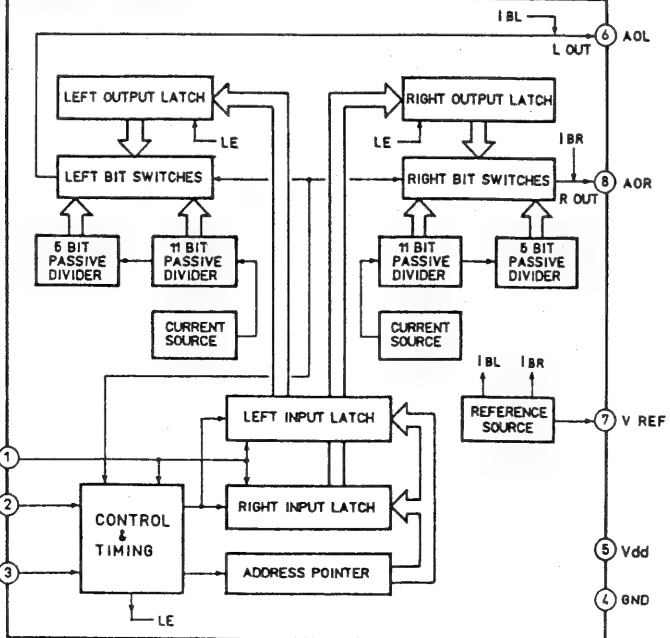
• IC81 LA1851N



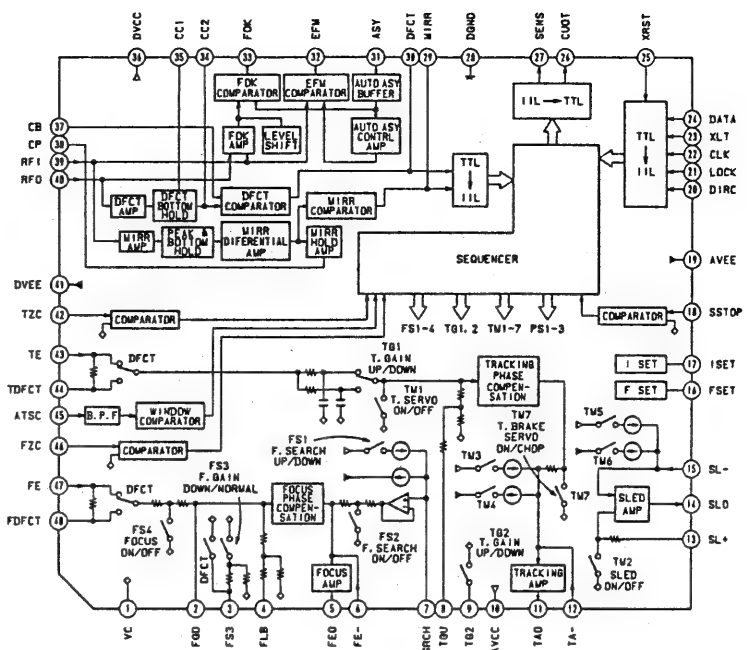
• IC221 CXD2554P



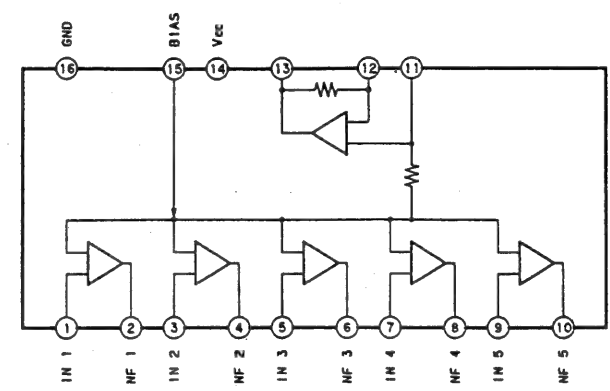
• IC222 TDA1543A



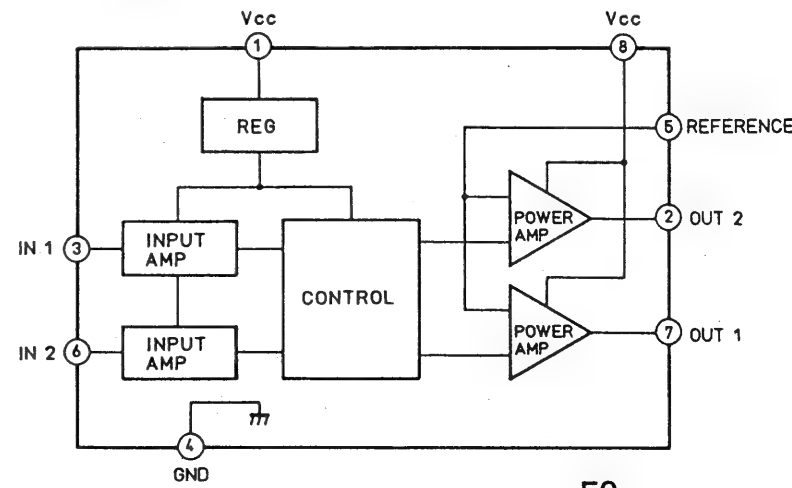
• IC101 CXA1372Q



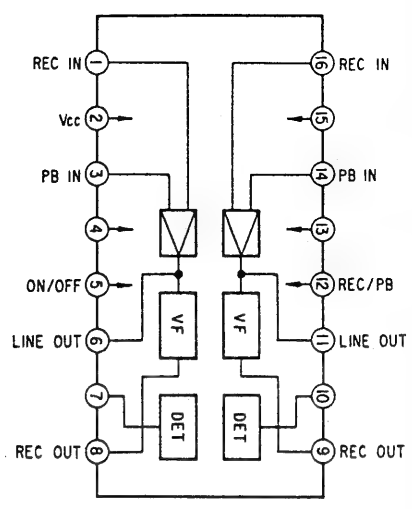
• IC501, IC551 M5226FP



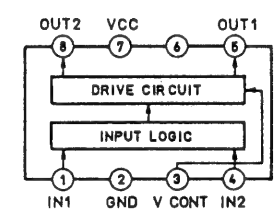
• IC253 M54641L



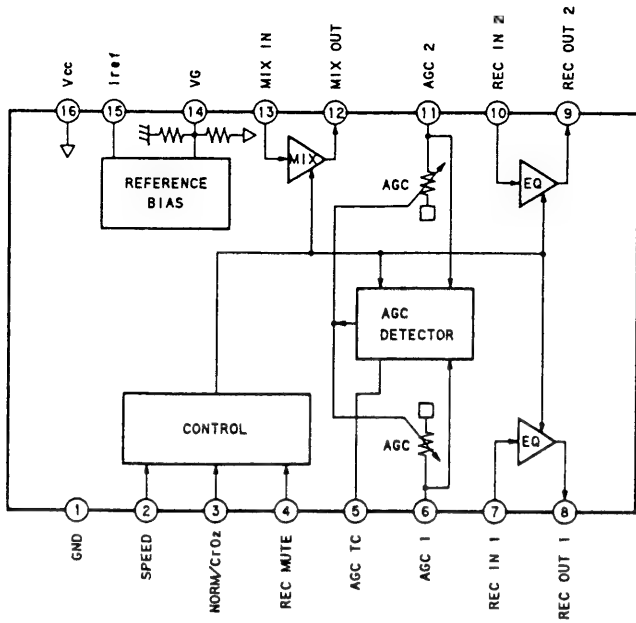
• IC702 CXA1101P



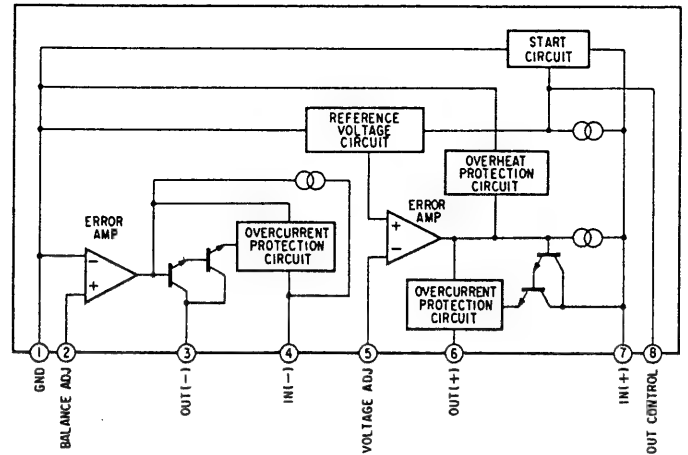
• IC406 LB1639



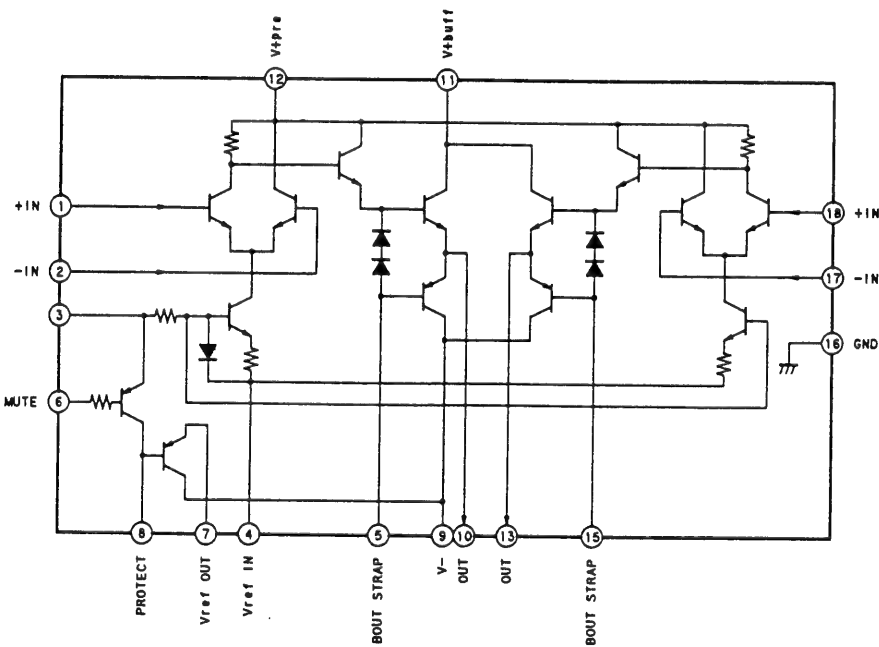
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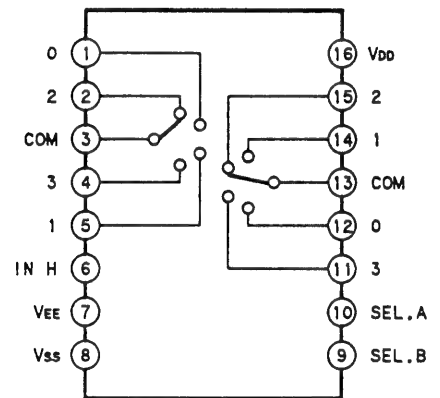
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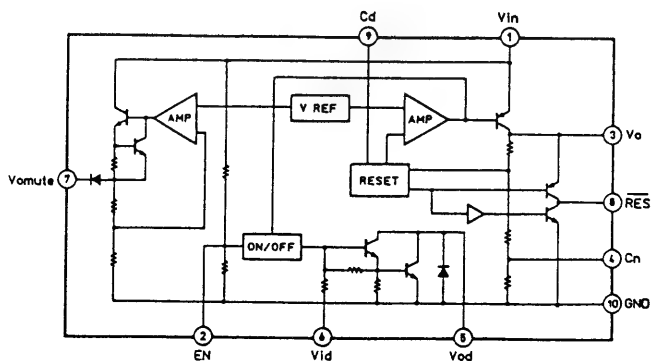
•IC801 STK-4122MK2



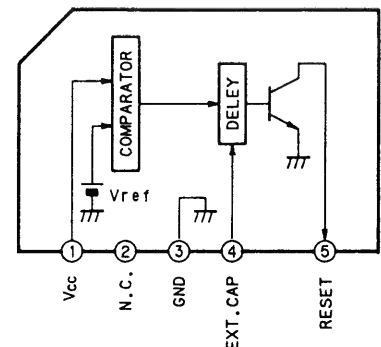
•IC705 M4052BPK



•IC999 LA5601



•IC706 M51953BL





## 6-9. IC PIN DESCRIPTIONS

● IC505 Display Control ( $\mu$ PD75212ACW-273)

Pin No.	Pin Name	I/O	ACTIVE	Description	Hold
1	S3	O	H	Segment, keyscan output terminals	Low
2	S2				
3	S1				
4	S0				
5	INT4	I	L	HOLD input	input
6	SCK	O	—	CLOCK (TC9217P T-BUS)	
7	SO	I/O	—	DATA (TC9217P T-BUS)	
8	PO3	I	L	SIGNAL input	
9	INT0	I	L	AUDIO-BUS input	input
10	INT1	I	Down	CD display data, timng	
11	P12	I	L	Remote control input	
12	P13	I	L	STEREO input	
13	P20	I	—	CD display data	input
14	P21				
15	P22				
16	P23				
17	P30	I	L	DUAL 2 input	input
18	P31	I	L	DUAL 1 input	
19	P32	O	L	POWER port	
20	P33	O	L	MUTING	Low
21	P60	I	H	Keyscan input	input
22	P61				
23	P62				
24	P63				
25	P40	O	—	FUNCTION A output	Low
26	P41	O	—	FUNCTION B output	
27	P42	O	H	AUDIO-BUS output	
28	P43	O	L	PERIOD (TC9217P T-BUS)	
29	PP0	—	—	Not used (open)	—
30	X1	—	—	Main system clock 4.19MHz	—
31	X2				
32	V <sub>ss</sub>	—	—	GND terminal (0V)	—
33	XT1	—	—	Sub system clock 32.768kHz	—
34	XT2				
35	P50	O	L	DBFB	Low
36	P51	O	L	SURROUND	
37	P52	O	L	Volume DOWN	
38	P53	O	L	Volume UP	
39	RESET	I	L	System reset input terminal	—
40	T0	O	H	Digit output	Low
41	T1				

Pin No.	Pin Name	I/O	ACTIVE	Description	Hold
42	T2	O	H	Digit output	Low
43	T3				
44	T4				
45	T5				
46	T6				
47	T7				
48	T8				
49	T9	O	—	Not used (open)	Low
50	S15	O	H	Segment output	Low
51	S14				
52	S13				
53	S12				
54	S11	O	H	Segment output, specification distinction diode output	Low
55	S10				
56	V <sub>LOAD</sub>	—	—	Pull-down resistor connect terminal of FIP driver	—
57	V <sub>PRE</sub>	—	—	Power supply terminal of FIP driver output buffer	—
58	S9	O	H	Segment output	Low
59	S8				
60	S7				
61	S6				
62	S5	O	H	Segment, keyscan output teminal	Low
63	S4				
64	V <sub>DD</sub>	—	—	Power supply terminal (5V)	—

#### [KEY, DIODE MATRIX]

	Key						Diode	
	S5	S4	S3	S2	S1	S0	S10	S11
S60	CLOCK	TIMER CONTROL	VIDEO	NEXT	STATION UP	STATION DOWN	TIMER FUNCTION	ST TYPE
S61	DISPLAY	—	TUNER	AUTO/MANUAL	SHIFT	ENTER	VIDEO/PHONO	—
S62	POWER	TIMER SET	CD	SURROUND	BAND	MEMORY	IF+50kHz	ST TYPE
S63	—	—	TAPE	DBFB	TUNING UP	TUNING DOWN	IF-50kHz	—

- 1) Pressing the key twice is not allowed. (First pressing is preceded)
- 2) The remote control precedes the input with the key.
- 3) Input the diode in resetting and in releasing HOLD.

● IC201 CD Controller ( $\mu$ PD75112CW-064)

Pin No.	Pin Name	I/O	Description
1	INSW	I	Disk tray clamp-end input
2	OUTSW	I	Disk tray open-end input
3	(TIMER)	I	Timer start input
4	BSIN	I	Audio bus input
5	Not Used	I	GND
6	Not Used	I	GND
7	Not Used	I	GND
8	Not Used	I	GND
9	SENS	I	SENS input, and the state input of every kind from CXD2500Q and CXA1372Q
10	Not Used	I	GND
11	SENS	I	SENS input, and the state input of every kind from CXD2500Q and CXA1372Q
12	Not Used	I	GND
13	Not Used	I	GND
14	Not Used	I	GND
15	SUBQ	I	Q data serial input from CXD2500Q
16	Not Used	O	OPEN
17	SQCLK	O	Sub-code Q data read-in clock output for CXD2500Q
18	SCOR	I	Sub-code synchro S0 and S1 detect input
19	Not Used	O	OPEN
20	Not Used	O	OPEN
21	PLAYL	O	Play LED ON/OFF output
22	PAUSL	O	Pause LED ON/OFF output
23	KEY3	I	Key data input
24	KEY2	I	Key data input
25	KEY1	I	Key data input
26	KEY0	I	Key data input
27	DG3	O	Key-scan digit output
28	DG2	O	Key-scan digit output
29	DG1	O	Key-scan digit output
30	DG0	O	Key-scan digit output
31	Not Used	I	+5V
32	VDD	I	+5V
33	Not Used	O	OPEN
34	Not Used	O	OPEN
35	Not Used	O	OPEN
36	Not Used	O	On time 1 track jump, tracking drive is inversed output for CXA1372Q
37	DPDAT3	O	Display data output for tuner amp micon
38	DPDAT2	O	Display data output for tuner amp micon
39	DPDAT1	O	Display data output for tuner amp micon
40	DPDAT0	O	Display data output for tuner amp micon
41	DPCLK	O	Display data transmission clock output for tuner amp micon
42	PRGL	O	Serial data latch pulse output for digital filter CXD2551P
43	PRGCK	O	Serial clock output for digital filter CXD2551P
44	PRGD	O	Serial clock output for digital filter CXD2551P



Pin No.	Pin Name	I/O	Description
45	RESET	I	System reset input terminal (LOW ACTIVE)
46	X2	I	System clock input 4.19MHz
47	X1	I	System clock input 4.19MHz
48	DFCTSW	O	From focus in till spindle kick is ON except then is OFF.
49	AMUTE	O	Muting ON/OFF output
50	BSOUT	O	Audio bus output
51	AFADJ	I	Test mode input, and on time POWER "L" is test move ment of every kind
52	LDON	O	Laser diode ON/OFF output
53	XLT	O	Serial data latch pulse output for CXD2500Q
54	CLK	O	Serial clock output for CXD2500Q
55	DATA	O	Serial data output for CXD2500Q
56	Not Used	I	GND
57	ADJ	I	Test mode input, "L" is GFS no check.
58	GFS	I	GFS OK/NO Good input
59	FOK	I	Focus OK NO Good input
60	Not Used	O	OPEN
61	Not Used	O	OPEN
62	LODOUT	O	Disc tray loading-out output
63	LODIN	O	Disc tray loading-in output
64	VSS	I	GND



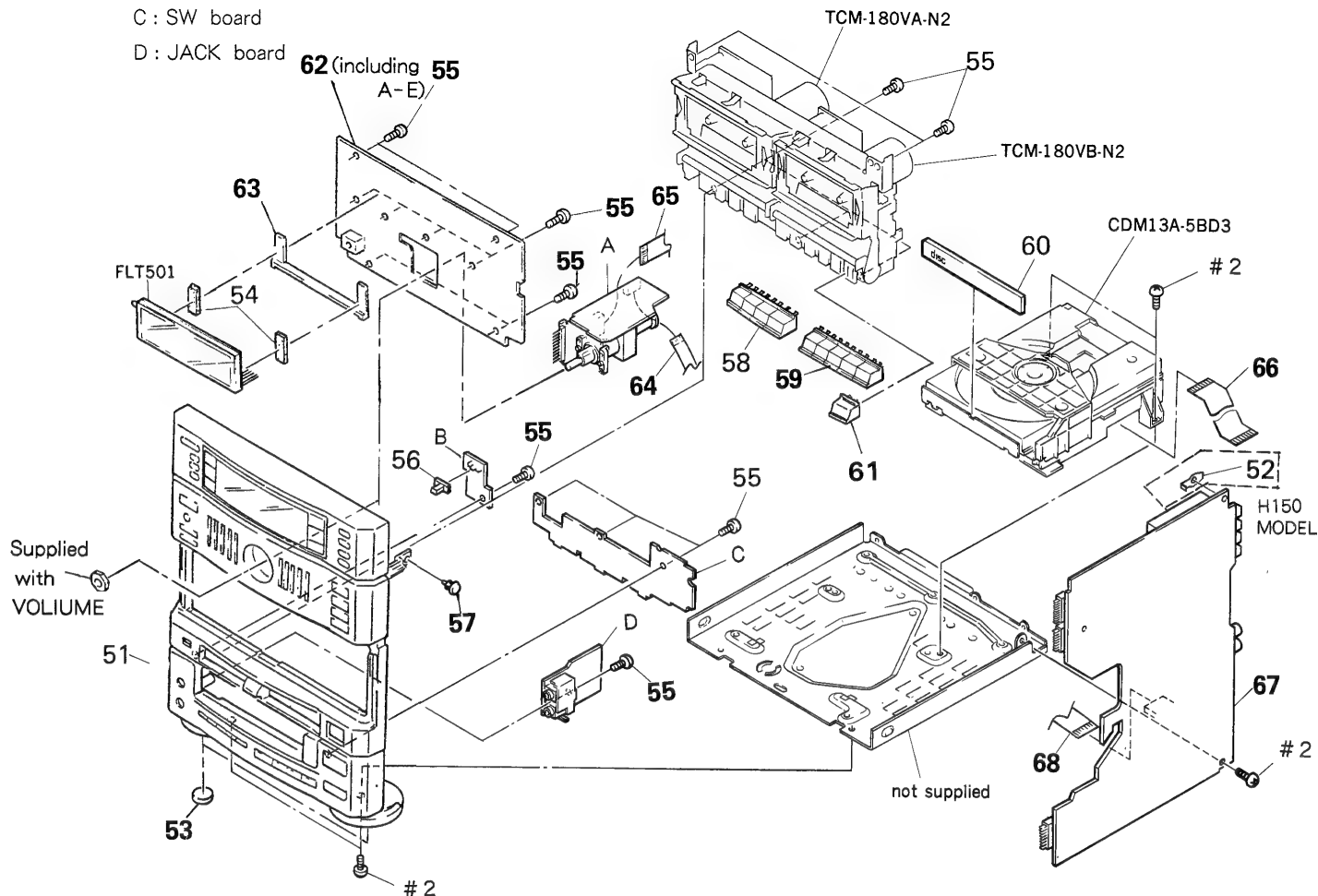
## 7-2. FRONT PANEL, MAIN BOARD BLOCK

A : VR board

B : DOLBY board

C : SW board

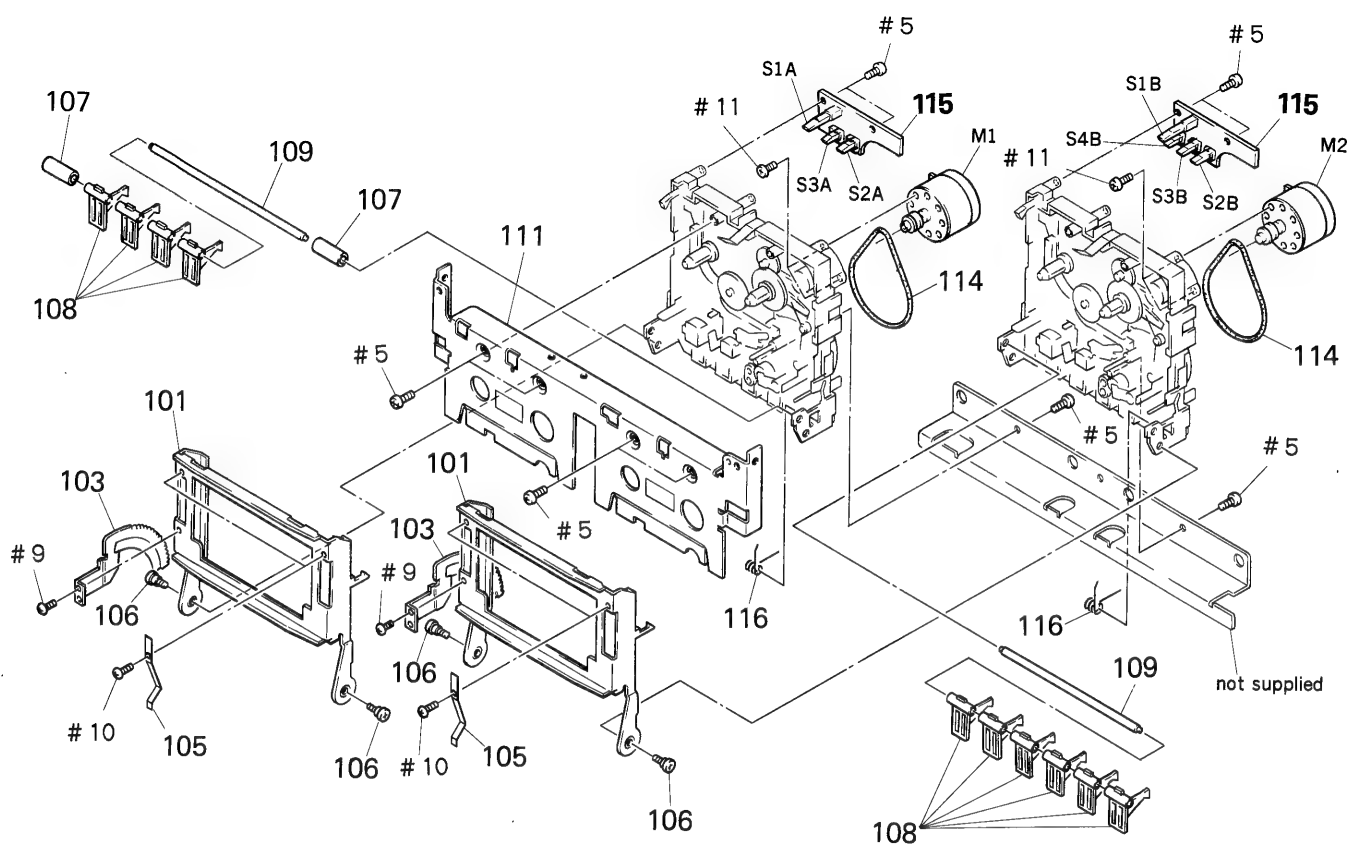
D : JACK board



Ref. No.	Part No.	Description	Remarks
51	X-4942-338-1	PANEL ASSY, FRONT (H150:AEP, EE, G, IT)	
51	X-4942-339-1	PANEL ASSY, FRONT (H150:E, EA, US, CND, JE, AUS)	
51	X-4942-340-1	PANEL ASSY, FRONT (H500)	
52	* 4-925-530-01	PLATE, GROUND (H150)	
53	3-319-288-01	FOOT	
54	* 4-932-810-01	CUSHION (FL)	
55	4-928-635-01	SCREW, +BV (2.6X8) TAPPING	
56	4-950-129-01	KNOB (DOLBY)	
57	4-812-134-31	RIVET NYLON, 3.5	
58	4-950-138-01	BUTTON (TC-A)	
59	4-950-139-01	BUTTON (TC-B)	
60	4-950-127-01	PANEL, LOADING	
61	4-950-140-01	BUTTON (PAUSE)	
62	* A-4343-535-A	DISPLAY BOARD, COMPLETE (H150:G)	
62	* A-4343-536-A	DISPLAY BOARD, COMPLETE (H150:US, CND)	
62	* A-4343-539-A	DISPLAY BOARD, COMPLETE (H500:UK)	
62	* A-4343-540-A	DISPLAY BOARD, COMPLETE (H150:E, JE)	

Ref. No.	Part No.	Description	Remarks
62	* A-4343-542-A	DISPLAY BOARD, COMPLETE (H150:IT)	
62	* A-4343-541-A	DISPLAY BOARD, COMPLETE (H150:AEP/H500:AEP)	
62	* A-4343-543-A	DISPLAY BOARD, COMPLETE (H150:EE)	
62	* A-4343-544-A	DISPLAY BOARD, COMPLETE (H150:EA, AUS)	
63	* 4-950-132-01	HOLDER (FL)	
64	1-690-971-11	WIRE (FLAT TYPE) (8 CORE)	
65	1-690-970-11	WIRE (FLAT TYPE) (13 CORE)	
66	1-535-832-12	JUMPER, FILM (WITH TERMINAL)	
67	* A-4343-537-A	MAIN BOARD, COMPLETE (H150:US, CND)	
67	* A-4343-538-A	MAIN BOARD, COMPLETE (H500)	
67	* A-4343-694-A	MAIN BOARD, COMPLETE (H150:E, EA, JE, AUS)	
67	* A-4343-709-A	MAIN BOARD, COMPLETE (H150:AEP)	
67	* A-4343-710-A	MAIN BOARD, COMPLETE (H150:EE)	
67	* A-4343-711-A	MAIN BOARD, COMPLETE (H150:G, IT)	
68	1-575-673-11	WIRE, FLAT TYPE (15 CORE)	
FLT501	1-519-734-11	INDICATOR TUBE, FLUORESCENT	

## 7-3. MD CHASSIS BLOCK

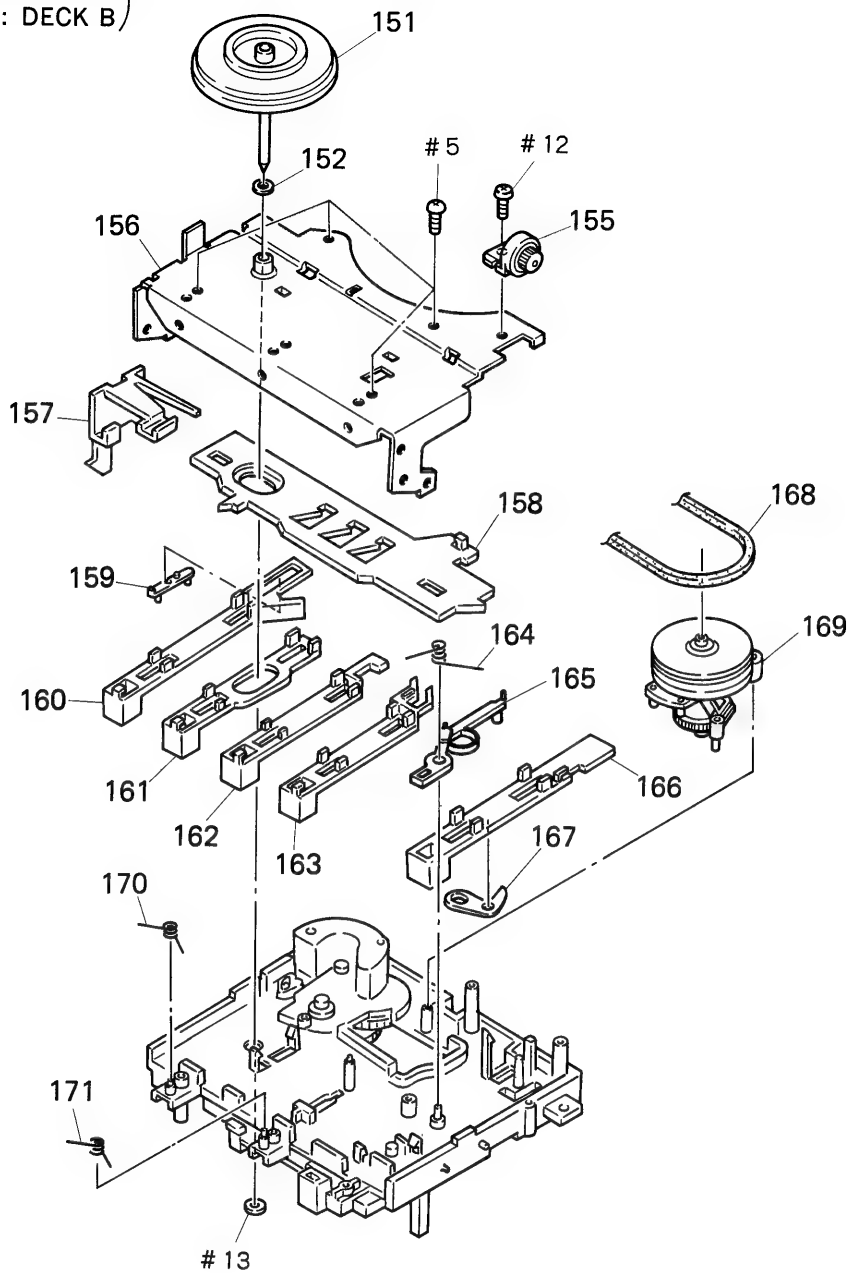


Ref. No.	Part No.	Description	Remarks
101	3-358-282-01	HOLDER (FH), CASSETTE	
103	* 3-358-276-01	RACK, GEAR	
105	3-358-280-01	SPRING (CASSETTE HOLDER FH)	
106	3-358-277-01	SCREW, STEP	
107	* 3-358-216-01	COLLAR (DECK A)	
108	3-358-268-01	LEVER (BUTTON BASE B)	
109	3-358-242-01	SHAFT (BUTTON SHAFT)	
111	X-4936-821-1	JOINT (UPPER) ASSY	
114	3-358-230-01	BELT (A1)	
115	* 1-635-160-11	PC BOARD, SWITCH	

Ref. No.	Part No.	Description	Remarks
116	3-358-278-01	SPRING (LOADING FH), TORSION	
M1	X-3358-211-1	MOTOR (A) ASSY	
M2	X-3358-211-1	MOTOR (B) ASSY	
S1A	1-572-335-11	SWITCH, LEAF (Cr02) (DECK A)	
S1B	1-572-335-11	SWITCH, LEAF (Cr02) (DECK B)	
S2A	1-571-736-11	SWITCH, LEAF (MD POWER) (DECK A)	
S2B	1-571-736-11	SWITCH, LEAF (MD POWER) (DECK B)	
S3A	1-571-736-11	SWITCH, LEAF (PLAY) (DECK A)	
S3B	1-571-736-11	SWITCH, LEAF (PLAY) (DECK B)	
S4B	1-571-736-11	SWITCH, LEAF (REC) (DECK B)	

#### 7-4. MECHANISM DECK BLOCK (1)

(TCM-180VA-N2: DECK A)  
(TCM-180VB-N2: DECK B)

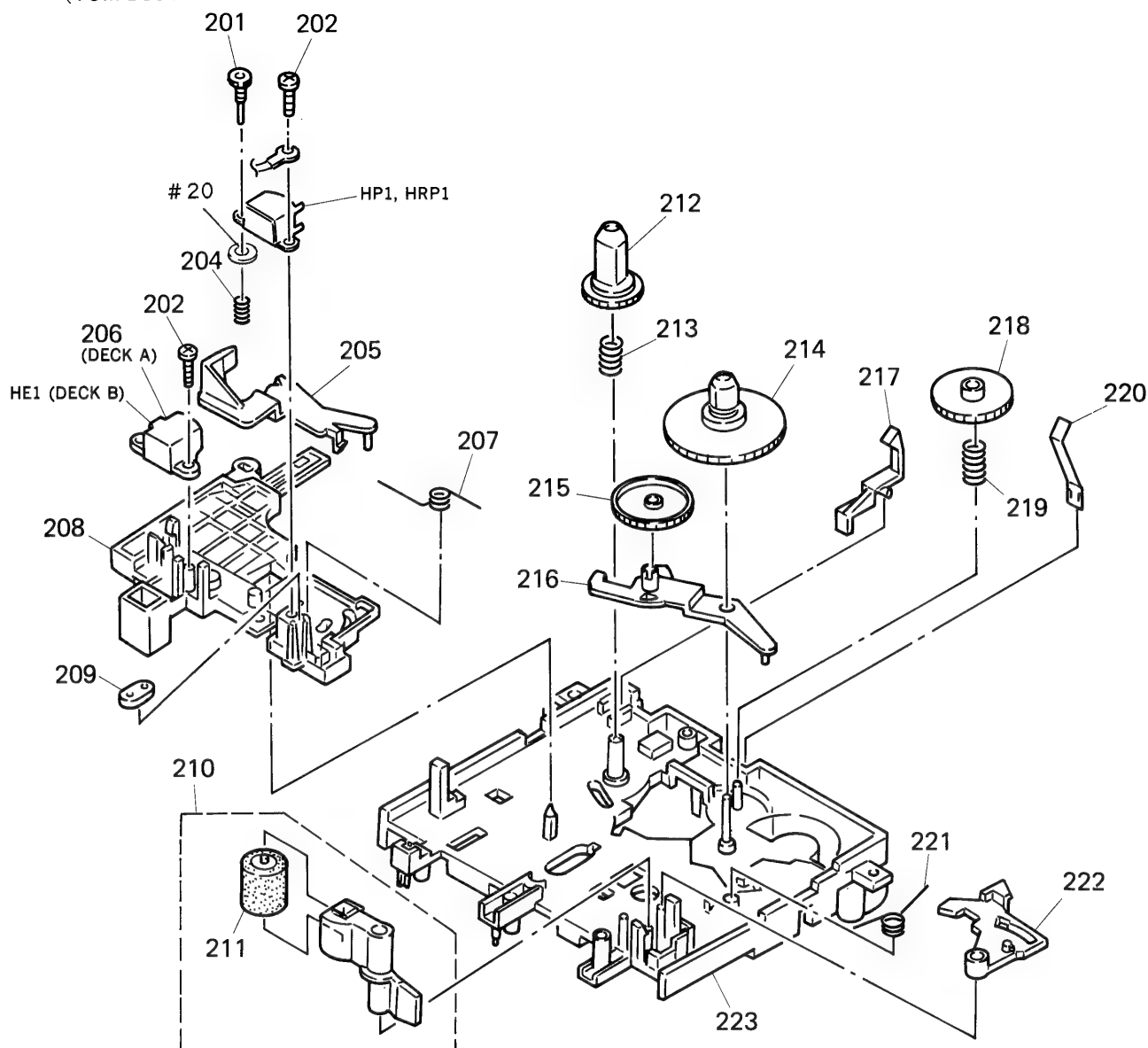


<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
151	X-3358-205-1	FLYWHEEL (A) ASSY	
152	3-701-437-01	WASHER	
155	4-919-393-21	DAMPER	
156	* X-3358-216-1	BRACKET (FH) ASSY	
157	3-358-281-01	SLIDER (HOLDER LOCK FH)	
158	* 3-358-249-01	SLIDER (LOCK PLATE)	
159	* 3-358-226-01	LEVER (PAUSE LEVER) (DECK B)	
160	3-358-260-01	SLIDER (PAUSE) (DECK B)	
161	3-358-256-01	SLIDER (STOP/EJECT)	
162	3-358-257-01	SLIDER (FF)	

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Remarks</u>
163	3-358-258-01	SLIDER (REW)	
164	3-358-214-01	SPRING (LOCK), TORSION (DECK A)	
164	3-358-233-01	SPRING (REC-LOCK), TORSION (DECK B)	
165	* 3-358-251-01	LEVER (TENSION DETECTION ARM)	
166	3-358-259-01	SLIDER (REC) (DECK B)	
167	* 3-358-204-01	LEVER (REC SAFETY) (DECK B)	
168	3-358-230-01	BELT (A1)	
169	X-3358-202-1	LEVER (FR ARM) ASSY	
170	3-358-232-01	SPRING (S-P F-R), TORSION (DECK B)	
170	3-358-279-01	SPRING (STOP), TORSION (DECK A)	
171	3-358-232-01	SPRING (S-P F-R), TORSION	

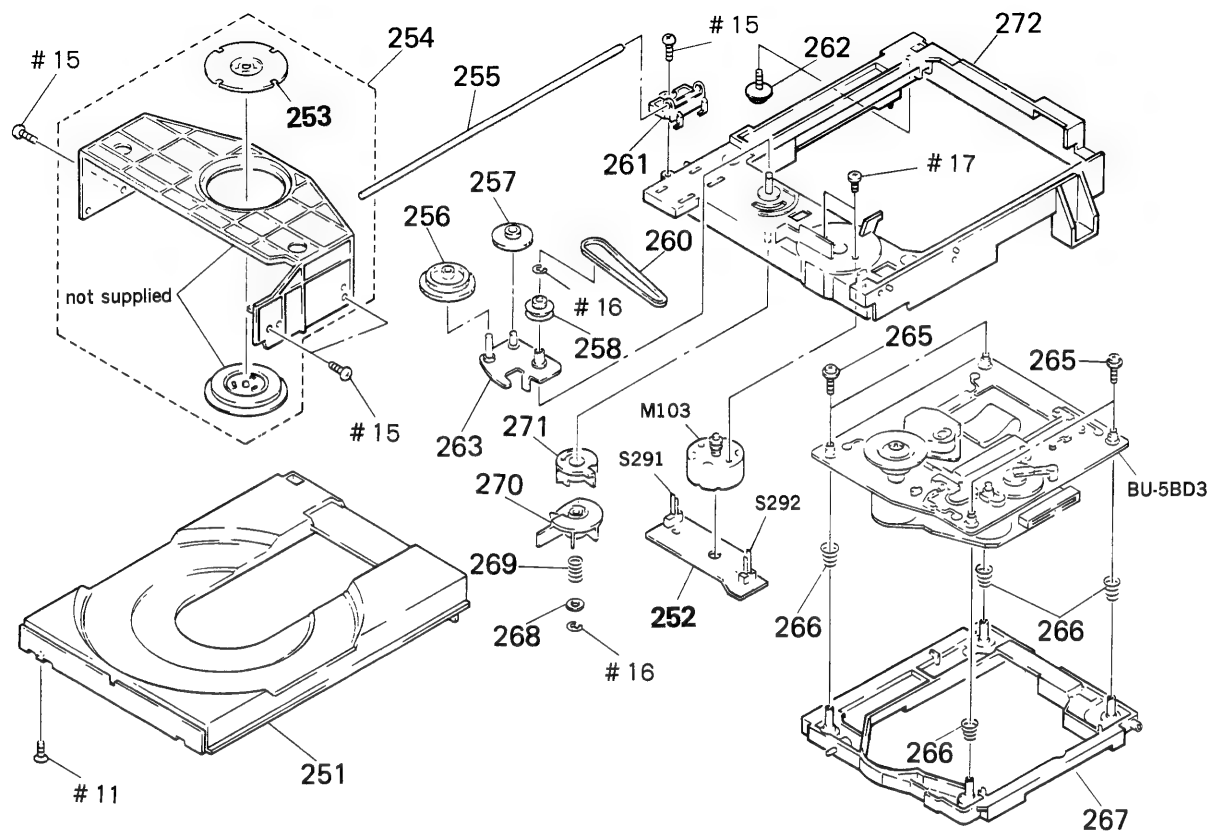
**7-5. MECHANISM DECK BLOCK (2)**

(TCM-180VA-N2: DECK A)  
(TCM-180VB-N2: DECK B)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
201	3-358-288-01	SCREW (T), AZIMUTH		214	X-3358-203-1	TABLE (T) ASSY, REEL	
202	3-358-288-11	SCREW (T), AZIMUTH		215	* 3-358-284-01	GEAR (TU GEAR)	
204	3-358-234-01	SPRING (AZIMUTH), COMPRESSION		216	* 3-358-252-01	LEVER (TU ARM)	
205	3-358-286-01	LEVER (MOTOR LEVER)		217	* 3-358-255-01	LEVER (GB LEVER)	
206	3-358-285-01	GUIDE, TAPE (DECK A)		218	* 3-358-224-01	GEAR (FF GEAR)	
207	3-358-228-01	SPRING, TORSION		219	3-358-207-01	SPRING (FF GEAR), COMPRESSION	
208	3-358-265-01	SLIDER (HEAD PC BOARD A)		220	3-358-227-01	SPRING, LEAF	
209	* 3-358-215-01	BUSHING (WIRE KIT RETAINER)		221	3-358-243-01	SPRING (TU-SHUT), TORSION	
210	X-3358-204-1	LEVER (PINCH LEVER) ASSY		222	* 3-358-253-01	LEVER (SHUT-OFF LEVER)	
211	3-578-143-11	PINCH ROLLER		223	* X-3358-215-1	CHASSIS (B) ASSY	
212	3-358-248-01	GEAR (SUPPLY REEL)		HE1	1-543-673-11	HEAD, MAGNETIC (ERASE)	
213	3-358-208-01	SPRING (SUPPLY), COMPRESSION		HP1	1-543-319-11	HEAD, MAGNETIC (REC/PB)	
				HRP1	1-543-319-11	HEAD, MAGNETIC (REC/PB)	

# 7-6. CD BLOCK (1) (CDM13A-5BD3)



Ref. No.	Part No.	Description
251	4-929-732-01	TABLE, DISK
252	* 1-634-461-11	LOADING BOARD
253	4-918-673-01	YOKE, CHUCKING
254	A-4604-219-A	HOLDER (MG) ASSY
255	4-929-764-01	SHAFT (TABLE GUIDE)
256	4-927-620-01	GEAR (P)
257	4-927-628-01	GEAR (C)
258	4-929-724-01	PULLEY (B)
260	4-927-649-01	BELT
261	4-929-723-01	GUIDE (T)
262	* 4-917-583-21	BRACKET, YOKE
263	X-4929-703-1	ARM ASSY, SWING

## Remarks

Ref. No.	Part No.	Description
265	4-933-134-01	SCREW (+PTPH M2.6X6)
266	4-917-541-01	SPRING (B)
267	4-929-747-01	HOLDER (BU)
268	4-927-654-01	WASHER (LIMITER)
269	3-659-338-00	SPRING, COMPRESSION
270	4-929-729-01	CAM (B)
271	4-929-727-01	CAM (A)
272	X-4929-709-2	CHASSIS (MD) ASSY
M103	A-4608-362-A	MOTOR (L) ASSY (LOADING)
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)

## Remarks





BD

## SECTION 8

### ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS :  
uF :  $\mu$ F
- EA : Saudi Arabia model  
JE : Tourist model  
CND : Canadian model  
EE : East European model

- RESISTORS  
All resistors are in ohms.  
METAL : metal-film resistor  
METAL OXIDE : Metal Oxide-film resistor  
F : nonflammable
- COILS  
uH :  $\mu$ H
- SEMICONDUCTORS  
In each case, u :  $\mu$ , for example :  
uA... :  $\mu$ A..., uPA...,  $\mu$ PA...,  
uPB...,  $\mu$ PB..., uPC...,  $\mu$ PC...,  
uPD...,  $\mu$ PD...
- G : Germany model  
IT : Italian model  
AUS : Australian model

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
* A-4617-371-A BD BOARD, COMPLETE				< CONNECTOR >			
*****				CN101	1-568-796-11	SOCKET, CONNECTOR 22P	
< CAPACITOR >				CN102	1-568-795-11	SOCKET, CONNECTOR 12P	
C101	1-163-038-00	CERAMIC CHIP 0.1uF	25V	< IC >			
C102	1-163-989-11	CERAMIC CHIP 0.033uF 10%	25V	IC101	8-752-053-73	IC CXA1372AQ	
C103	1-126-163-11	ELECT 4.7uF 20%	50V	IC102	8-759-822-36	IC LA6532M	
C104	1-163-038-00	CERAMIC CHIP 0.1uF	25V	< JUMPER >			
C105	1-126-154-11	ELECT 47uF 20%	6.3V	JR101	1-216-295-00	METAL CHIP 0 5% 1/10W	
C106	1-126-154-11	ELECT 47uF 20%	6.3V	JR102	1-216-295-00	METAL CHIP 0 5% 1/10W	
C107	1-126-154-11	ELECT 47uF 20%	6.3V	< TRANSISTOR >			
C108	1-163-038-00	CERAMIC CHIP 0.1uF	25V	Q101	8-729-901-01	TRANSISTOR DTC144EK	
C109	1-163-038-00	CERAMIC CHIP 0.1uF	25V	< RESISTOR >			
C110	1-163-989-11	CERAMIC CHIP 0.033uF 10%	25V	R101	1-216-097-00	METAL CHIP 100K 5% 1/10W	
C111	1-131-367-00	TANTALUM 22uF 10%	20V	R102	1-216-095-00	METAL CHIP 82K 5% 1/10W	
C112	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R103	1-216-091-00	METAL CHIP 56K 5% 1/10W	
C113	1-164-232-11	CERAMIC CHIP 0.01uF	50V	R104	1-216-099-00	METAL CHIP 120K 5% 1/10W	
C114	1-164-161-11	CERAMIC CHIP 0.0022uF 10%	100V	R105	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
C115	1-164-161-11	CERAMIC CHIP 0.0022uF 10%	100V	R106	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C117	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R107	1-216-114-00	METAL GLAZE 510K 5% 1/10W	
C118	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R108	1-216-105-00	METAL CHIP 220K 5% 1/10W	
C119	1-164-161-11	CERAMIC CHIP 0.0022uF 10%	100V	R109	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
C120	1-163-989-11	CERAMIC CHIP 0.033uF 10%	25V	R110	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C151	1-163-019-00	CERAMIC CHIP 0.0068uF 10%	50V	R111	1-216-049-00	METAL CHIP 1K 5% 1/10W	
C152	1-163-038-00	CERAMIC CHIP 0.1uF	25V	R112	1-216-083-00	METAL CHIP 27K 5% 1/10W	
C153	1-163-006-11	CERAMIC CHIP 560PF 10%	50V	R113	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
C154	1-164-161-11	CERAMIC CHIP 0.0022uF 10%	100V	R114	1-216-105-00	METAL CHIP 220K 5% 1/10W	
C155	1-163-023-00	CERAMIC CHIP 0.015uF 5%	50V	R152	1-216-073-00	METAL CHIP 10K 5% 1/10W	
C171	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C172	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C173	1-163-038-00	CERAMIC CHIP 0.1uF	25V				
C174	1-163-038-00	CERAMIC CHIP 0.1uF	25V				

BD

DISPLAY

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R153	1-216-085-00	METAL CHIP 33K 5% 1/10W		C417	1-126-157-11	ELECT 10uF 20% 16V	
R154	1-216-085-00	METAL CHIP 33K 5% 1/10W		C418	1-126-157-11	ELECT 10uF 20% 16V	
R155	1-216-093-00	METAL CHIP 68K 5% 1/10W		C419	1-126-157-11	ELECT 10uF 20% 16V	
R156	1-216-081-00	METAL CHIP 22K 5% 1/10W		C420	1-126-157-11	ELECT 10uF 20% 16V	
R157	1-216-079-00	METAL CHIP 18K 5% 1/10W		C421	1-126-157-11	ELECT 10uF 20% 16V	
R158	1-216-079-00	METAL CHIP 18K 5% 1/10W		C422	1-126-157-11	ELECT 10uF 20% 16V	
R159	1-216-079-00	METAL CHIP 18K 5% 1/10W		C423	1-161-379-00	CERAMIC 0.01uF 20% 25V	
R160	1-216-049-00	METAL CHIP 1K 5% 1/10W		C451	1-162-282-31	CERAMIC 100PF 10% 50V	
R171	1-216-001-00	METAL CHIP 10 5% 1/10W				(EXCEPT H150:G, IT)	
R172	1-216-001-00	METAL CHIP 10 5% 1/10W		C451	1-162-294-31	CERAMIC 0.001uF 10% 50V (H150:G, IT)	
				C452	1-162-282-31	CERAMIC 100PF 10% 50V	
R173	1-216-001-00	METAL CHIP 10 5% 1/10W		C453	1-162-290-31	CERAMIC 470PF 10% 50V	
R174	1-216-001-00	METAL CHIP 10 5% 1/10W		C460	1-126-157-11	ELECT 10uF 20% 16V	
		< VARIABLE RESISTOR >		C471	1-162-294-31	CERAMIC 0.001uF 10% 50V	
RV101	1-238-016-11	RES, ADJ, CARBON 10K		C472	1-162-294-31	CERAMIC 0.001uF 10% 50V	
RV102	1-238-016-11	RES, ADJ, CARBON 10K		C473	1-162-282-31	CERAMIC 100PF 10% 50V	
		< SWITCH >		C474	1-162-215-31	CERAMIC 47PF 5% 50V	
S101	1-572-085-11	SWITCH, LEAF(LIMIT IN)		C475	1-164-159-11	CERAMIC 0.1uF 50V	
				C491	1-164-159-11	CERAMIC 0.1uF 50V	
				C492	1-164-159-11	CERAMIC 0.1uF 50V	
				C493	1-164-159-11	CERAMIC 0.1uF 50V	
		*****		C494	1-164-159-11	CERAMIC 0.1uF 50V	
		* A-4343-535-A DISPLAY BOARD, COMPLETE (H150:G)		C501	1-162-282-31	CERAMIC 100PF 10% 50V	
		*****		C502	1-162-294-31	CERAMIC 0.001uF 10% 50V	
		* A-4343-540-A DISPLAY BOARD, COMPLETE (H150:E, JE)		C504	1-162-289-31	CERAMIC 390PF 10% 50V	
		*****		C505	1-161-329-00	CERAMIC 0.0068uF 30% 16V	
		* A-4343-541-A DISPLAY BOARD, COMPLETE (H150:AEP/H500:AEP)		C506	1-162-294-31	CERAMIC 0.001uF 10% 50V	
		*****		C507	1-161-494-00	CERAMIC 0.022uF 25V	
		* A-4343-542-A DISPLAY BOARD, COMPLETE (H150:IT)		C508	1-161-327-00	CERAMIC 0.0033uF 30% 16V	
		*****		C509	1-164-159-11	CERAMIC 0.1uF 50V	
		* A-4343-544-A DISPLAY BOARD, COMPLETE (H150:EA, AUS)		C510	1-161-379-00	CERAMIC 0.01uF 20% 25V	
		*****		C511	1-124-464-11	ELECT 0.22uF 20% 50V	
		* A-4343-539-A DISPLAY BOARD, COMPLETE (H500:UK)		C512	1-161-494-00	CERAMIC 0.022uF 25V	
		*****		C513	1-126-160-11	ELECT 1uF 20% 50V	
		* A-4343-536-A DISPLAY BOARD, COMPLETE (H150:US, CND)		C514	1-136-163-00	FILM 0.068uF 5% 50V	
		*****		C515	1-136-163-00	FILM 0.068uF 5% 50V	
		* A-4343-543-A DISPLAY BOARD, COMPLETE (H150:EE)		C521	1-161-379-00	CERAMIC 0.01uF 20% 25V	
		*****		C522	1-164-159-11	CERAMIC 0.1uF 50V	
		1-690-880-11 LEAD (WITH CONNECTOR)(EXCEPT H150:G, IT)		C523	1-161-379-00	CERAMIC 0.01uF 20% 25V	
		1-690-880-61 LEAD (WITH CONNECTOR)(H150:G, IT)		C524	1-161-379-00	CERAMIC 0.01uF 20% 25V	
		* 4-932-810-01 CUSHION (FL)		C551	1-162-282-31	CERAMIC 100PF 10% 50V	
		* 4-950-132-01 HOLDER (FL)		C552	1-162-294-31	CERAMIC 0.001uF 10% 50V	
		< CAPACITOR >		C554	1-162-289-31	CERAMIC 390PF 10% 50V	
C401	1-162-282-31	CERAMIC 100PF 10% 50V		C555	1-161-329-00	CERAMIC 0.0068uF 30% 16V	
		(EXCEPT H150:G, IT)		C556	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C401	1-162-294-31	CERAMIC 0.001uF 10% 50V(H150:G, IT)		C557	1-161-494-00	CERAMIC 0.022uF 25V	
C402	1-162-282-31	CERAMIC 100PF 10% 50V		C558	1-161-327-00	CERAMIC 0.0033uF 30% 16V	
C403	1-162-290-31	CERAMIC 470PF 10% 50V		C559	1-164-159-11	CERAMIC 0.1uF 50V	
C410	1-126-157-11	ELECT 10uF 20% 16V		C560	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C416	1-124-463-00	ELECT 0.1uF 20% 50V		C561	1-124-464-11	ELECT 0.22uF 20% 50V	
				C562	1-161-494-00	CERAMIC 0.022uF 25V	

## DISPLAY

Ref. No.	Part No.	Description	Remarks
C563	1-126-160-11	ELECT 1uF 20% 50V	
C564	1-136-163-00	FILM 0.068uF 5% 50V	
C565	1-136-163-00	FILM 0.068uF 5% 50V	
C566	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C568	1-126-157-11	ELECT 10uF 20% 16V	
C571	1-124-584-00	ELECT 100uF 20% 10V	
C572	1-124-584-00	ELECT 100uF 20% 10V	
C573	1-126-160-11	ELECT 1uF 20% 50V	
C574	1-126-160-11	ELECT 1uF 20% 50V	
C578	1-164-159-11	CERAMIC 0.1uF 50V	
C579	1-136-173-00	FILM 0.47uF 5% 50V	
C580	1-136-173-00	FILM 0.47uF 5% 50V	
C581	1-136-173-00	FILM 0.47uF 5% 50V	
C582	1-164-159-11	CERAMIC 0.1uF 50V	
C583	1-162-282-31	CERAMIC 100PF 10% 50V	
C584	1-162-282-31	CERAMIC 100PF 10% 50V	
C585	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C586	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C587	1-162-282-31	CERAMIC 100PF 10% 50V	
C588	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C589	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C590	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C592	1-162-197-31	CERAMIC 6.8PF 10% 50V	
C593	1-162-197-31	CERAMIC 6.8PF 10% 50V	
C594	1-162-199-31	CERAMIC 10PF 5% 50V	
C595	1-162-199-31	CERAMIC 10PF 5% 50V	
C596	1-125-486-11	DOUBLE LAYERS 0.22F 5.5V	
C597	1-126-157-11	ELECT 10uF 20% 16V	
C598	1-124-584-00	ELECT 100uF 20% 10V	
C901	1-164-159-11	CERAMIC 0.1uF 50V	
C902	1-164-159-11	CERAMIC 0.1uF 50V	
C905	1-124-122-11	ELECT 100uF 20% 50V	
C906	1-124-556-11	ELECT 2200uF 20% 16V	
C907	1-124-572-11	ELECT 100uF 20% 63V	
C909	1-126-163-11	ELECT 4.7uF 20% 50V	
C911	1-126-163-11	ELECT 4.7uF 20% 50V	
C912	1-126-157-11	ELECT 10uF 20% 16V	
C913	1-126-163-11	ELECT 4.7uF 20% 50V	
C915	1-126-163-11	ELECT 4.7uF 20% 50V	
C916	1-126-163-11	ELECT 4.7uF 20% 50V	
C917	1-126-163-11	ELECT 4.7uF 20% 50V	
C920	1-164-159-11	CERAMIC 0.1uF 50V(H150:AUS)	
C921	1-164-159-11	CERAMIC 0.1uF 50V(H150:AUS)	
C922	1-126-163-11	ELECT 4.7uF 20% 50V	
C1026	1-164-159-11	CERAMIC 0.1uF 50V(H150:G, IT)	
C1027	1-164-159-11	CERAMIC 0.1uF 50V(H150:G, IT)	
C1028	1-164-282-31	CERAMIC 150PF 10% 50V(H150:G, IT)	
C1029	1-164-282-31	CERAMIC 150PF 10% 50V(H150:G, IT)	
C1030	1-164-159-11	CERAMIC 0.1uF 10% 50V(H150:G, IT)	
C1031	1-161-379-00	CERAMIC 0.01uF 30% 16V(H150:G, IT)	

Ref. No.	Part No.	Description	Remarks
C1032	1-162-282-31	CERAMIC 150PF 10% 50V(H150:G, IT)	
C1033	1-162-294-31	CERAMIC 0.001uF 10% 50V(H150:G, IT)	
C1034	1-162-294-31	CERAMIC 0.001uF 10% 50V(H150:G, IT)	
C1035	1-161-379-00	CERAMIC 0.01uF 20% 25V(H150:G, IT)	
C5002	1-161-379-00	CERAMIC 0.01uF 20% 25V(H150:G, IT)	
C4001	1-126-157-11	ELECT 10uF 20% 16V	
C4002	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C5001	1-161-375-00	CERAMIC 0.0022uF 20% 50V	
< CONNECTOR >			
CN203	* 1-569-156-11	SOCKET, CONNECTOR 10P	
CN401	* 1-569-418-11	PIN, CONNECTOR 13P	
CN402	* 1-568-856-11	SOCKET, CONNECTOR 13P	
CN403	* 1-568-827-11	SOCKET, CONNECTOR 8P	
CN404	* 1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P	
CN451	* 1-568-851-11	SOCKET, CONNECTOR 8P	
CN501	* 1-569-156-11	SOCKET, CONNECTOR 10P	
CN502	* 1-569-156-11	SOCKET, CONNECTOR 10P	
CN503	* 1-509-931-11	SOCKET, CONNECTOR	
CN901	1-526-930-11	INLET, AC (H150:AEP, EE, EA, G, IT/H500)	
CN901	1-526-931-11	INLET, AC (H150:AEP, EE, EA, G, IT, AUS/H500))	
CN901	1-526-930-11	INLET, AC (H150:E, JE, US, CND)	
CN902	* 1-568-858-11	SOCKET, CONNECTOR 15P	
CN903	* 1-565-484-11	CONNECTOR, BOARD TO BOARD 8P	
< COMPOSITION CIRCUIT BLOCK >			
CP503	* 1-233-216-11	COMPOSITION CIRCUIT BLOCK	
CP504	* 1-233-216-11	COMPOSITION CIRCUIT BLOCK	
< DIODE >			
D406	8-719-987-63	DIODE 1N4148M	
D522	8-719-301-49	DIODE SEL2810A	
D523	8-719-301-49	DIODE SEL2810A	
D571	8-719-987-63	DIODE 1N4148M	
D572	8-719-987-63	DIODE 1N4148M	
D574	8-719-987-63	DIODE 1N4148M	
D576	8-719-987-63	DIODE 1N4148M	
D577	8-719-987-63	DIODE 1N4148M	
D578	8-719-987-63	DIODE 1N4148M	
D579	8-719-987-63	DIODE 1N4148M	
D580	8-719-987-63	DIODE 1N4148M	
D581	8-719-987-63	DIODE 1N4148M	
D582	8-719-987-63	DIODE 1N4148M	
D583	8-719-987-63	DIODE 1N4148M	
D584	8-719-987-63	DIODE 1N4148M	
D585	8-719-987-63	DIODE 1N4148M (H150:E, EA, AUS, JE)	
D588	8-719-987-63	DIODE 1N4148M (EXCEPT H150:US, CND, IT)	
D589	8-719-987-63	DIODE 1N4148M (H150:IT)	
D590	8-719-987-63	DIODE 1N4148M (H150:E, EA, JE, AUS)	
D598	8-719-001-21	DIODE UZL-9H1	

## DISPLAY

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
D903	8-719-200-82	DIODE 11ES2		R404	1-249-425-11	CARBON 4.7K 5% 1/4W	
D904	8-719-200-82	DIODE 11ES2		R405	1-249-401-11	CARBON 47 5% 1/4W	
D907	8-719-200-82	DIODE 11ES2		R406	1-249-429-11	CARBON 10K 5% 1/4W	
D908	8-719-200-82	DIODE 11ES2		R416	1-249-425-11	CARBON 4.7K 5% 1/4W	
D909	8-719-312-09	DIODE RBA-402		R417	1-249-425-11	CARBON 4.7K 5% 1/4W	
D910	8-719-002-33	DIODE UZL-24L		R418	1-249-425-11	CARBON 4.7K 5% 1/4W	
D911	8-719-014-64	DIODE UZP-5.1BC		R419	1-249-417-11	CARBON 1K 5% 1/4W	
D912	8-719-933-36	DIODE HZS6B1L		R426	1-249-417-11	CARBON 1K 5% 1/4W	
FB901	* 1-410-858-11	INDUCTOR 0uH (H150:G, IT)		R427	1-249-441-11	CARBON 100K 5% 1/4W	
FB902	* 1-410-858-11	INDUCTOR 0uH (H150:G, IT)		R428	1-247-903-00	CARBON 1M 5% 1/4W	
< FILTER >				R429	1-249-417-11	CARBON 1K 5% 1/4W	
FLT501	1-519-734-11	INDICATOR TUBE, FLUORESCENT		R430	1-249-425-11	CARBON 4.7K 5% 1/4W	
< IC >				R431	1-249-425-11	CARBON 4.7K 5% 1/4W	
IC401	8-759-634-50	IC M5218AL		R432	1-249-429-11	CARBON 10K 5% 1/4W	
IC406	8-759-820-62	IC LB1639		R451	1-249-417-11	CARBON 1K 5% 1/4W	
IC451	8-759-634-50	IC M5218AL		R452	1-249-441-11	CARBON 100K 5% 1/4W	
IC501	8-759-630-99	IC M5226FP		R453	1-249-441-11	CARBON 100K 5% 1/4W	
IC502	8-759-634-50	IC M5218AL		R454	1-249-425-11	CARBON 4.7K 5% 1/4W	
IC503	8-759-520-98	IC PST572K		R455	1-249-401-11	CARBON 47 5% 1/4W	
IC505	8-759-153-84	IC uPD75212ACW-273		R456	1-249-429-11	CARBON 10K 5% 1/4W	
IC506	8-749-922-36	IC GP1U50XB		R457	1-249-429-11	CARBON 10K 5% 1/4W	
IC551	8-759-630-99	IC M5226FP		R466	1-249-425-11	CARBON 4.7K 5% 1/4W	
IC901	8-759-602-66	IC M5230L-A		R467	1-249-425-11	CARBON 4.7K 5% 1/4W	
< JACK >				R468	1-249-425-11	CARBON 4.7K 5% 1/4W	
J401	1-562-837-21	JACK (MIX MIC)		R469	1-249-417-11	CARBON 1K 5% 1/4W	
J451	1-562-837-21	JACK (HEADPHONES)		R471	1-249-429-11	CARBON 10K 5% 1/4W	
< TRANSISTOR >				R472	1-249-411-11	CARBON 330 5% 1/4W	
Q406	8-729-904-39	TRANSISTOR DTC114TS		R473	1-249-441-11	CARBON 100K 5% 1/4W	
Q407	8-729-904-39	TRANSISTOR DTC114TS		R474	1-249-411-11	CARBON 330 5% 1/4W	
Q456	8-729-904-39	TRANSISTOR DTC114TS		R475	1-249-441-11	CARBON 100K 5% 1/4W	
Q457	8-729-904-39	TRANSISTOR DTC114TS		R486	1-249-413-11	CARBON 470 5% 1/4W	
Q501	8-729-904-39	TRANSISTOR DTC114TS		R487	1-249-429-11	CARBON 10K 5% 1/4W	
Q551	8-729-904-39	TRANSISTOR DTC114TS		R501	1-247-903-00	CARBON 1M 5% 1/4W	
Q572	8-729-900-61	TRANSISTOR DTA114ES		R502	1-249-425-11	CARBON 4.7K 5% 1/4W	
Q573	8-729-224-61	TRANSISTOR 2SK246-Y		R503	1-249-411-11	CARBON 330 5% 1/4W	
Q574	8-729-900-80	TRANSISTOR DTC114ES		R504	1-247-903-00	CARBON 1M 5% 1/4W	
Q903	8-729-141-83	TRANSISTOR 2SB1094-LK		R505	1-249-419-11	CARBON 1.5K 5% 1/4W	
Q904	8-729-141-83	TRANSISTOR 2SB1094-LK		R506	1-249-434-11	CARBON 27K 5% 1/4W	
Q905	8-729-209-15	TRANSISTOR 2SD2012		R507	1-247-903-00	CARBON 1M 5% 1/4W	
Q906	8-729-209-15	TRANSISTOR 2SD2012		R522	1-249-409-11	CARBON 220 5% 1/4W	
Q907	8-729-900-80	TRANSISTOR DTC114ES		R523	1-249-409-11	CARBON 220 5% 1/4W	
Q908	8-729-900-80	TRANSISTOR DTC114ES		R524	1-249-439-11	CARBON 68K 5% 1/4W	
< RESISTOR >				R525	1-249-417-11	CARBON 1K 5% 1/4W	
R401	1-249-417-11	CARBON 1K 5% 1/4W		R526	1-249-405-11	CARBON 100 5% 1/4W	
R402	1-249-441-11	CARBON 100K 5% 1/4W		R527	1-249-405-11	CARBON 100 5% 1/4W	
R403	1-249-441-11	CARBON 100K 5% 1/4W		R528	1-249-405-11	CARBON 100 5% 1/4W	
				R529	1-249-405-11	CARBON 100 5% 1/4W	
				R530	1-249-405-11	CARBON 100 5% 1/4W	
				R531	1-249-405-11	CARBON 100 5% 1/4W	
				R534	1-249-405-11	CARBON 100 5% 1/4W	

## DISPLAY

Ref. No.	Part No.	Description	Remarks
R535	1-249-405-11	CARBON 100 5% 1/4W	
R536	1-249-405-11	CARBON 100 5% 1/4W	
R537	1-249-429-11	CARBON 10K 5% 1/4W	
R551	1-247-903-00	CARBON 1M 5% 1/4W	
R552	1-249-425-11	CARBON 4.7K 5% 1/4W	
R553	1-249-411-11	CARBON 330 5% 1/4W	
R554	1-247-903-00	CARBON 1M 5% 1/4W	
R555	1-249-419-11	CARBON 1.5K 5% 1/4W	
R556	1-249-434-11	CARBON 27K 5% 1/4W	
R557	1-247-903-00	CARBON 1M 5% 1/4W	
R569	1-249-429-11	CARBON 10K 5% 1/4W	
R570	1-249-417-11	CARBON 1K 5% 1/4W	
R571	1-249-441-11	CARBON 100K 5% 1/4W	
R572	1-247-891-00	CARBON 330K 5% 1/4W	
R573	1-249-425-11	CARBON 4.7K 5% 1/4W	
R574	1-249-441-11	CARBON 100K 5% 1/4W	
R577	1-249-405-11	CARBON 100 5% 1/4W	
R582	1-249-429-11	CARBON 10K 5% 1/4W	
R596	1-249-429-11	CARBON 10K 5% 1/4W	
R599	1-249-429-11	CARBON 10K 5% 1/4W	
R905	△ 1-212-934-00	FUSIBLE 1 5% 1/2W F (EXCEPT H150:US,CND)	
R905	△ 1-212-952-00	FUSIBLE 5.6 5% 1/2W F (H150:US,CND)	
R906	△ 1-212-934-00	FUSIBLE 1 5% 1/2W F	
R907	△ 1-212-934-00	FUSIBLE 1 5% 1/2W F (EXCEPT H150:US,CND)	
R907	△ 1-212-952-00	FUSIBLE 5.6 5% 1/2W F (H150:US,CND)	
R908	1-249-425-11	CARBON 4.7K 5% 1/4W	
R909	1-249-433-11	CARBON 22K 5% 1/4W	
R910	1-247-903-00	CARBON 1M 5% 1/4W	
R911	1-249-405-11	CARBON 100 5% 1/4W	
R912	1-249-432-11	CARBON 18K 5% 1/4W	
R913	1-249-432-11	CARBON 18K 5% 1/4W	
R914	1-247-842-11	CARBON 3K 5% 1/4W	
R915	1-249-429-11	CARBON 10K 5% 1/4W	
R917	1-249-413-11	CARBON 470 5% 1/4W	
R920	△ 1-219-134-11	FUSIBLE 0.1 5% 1/4W F	
R926	1-202-725-00	SOLID 3.3M 10% 1/2W (H150:US,CND)	
R4001	1-249-423-11	CARBON 3.3K 5% 1/4W	
< VARIABLE RESISTOR >			
RV406	1-241-419-21	RES, VAR, CARBON 100KX2 (VOLUME)	
RV501	1-241-860-11	RES, VAR, SLIDE 250K (12kHz)	
RV502	1-241-860-11	RES, VAR, SLIDE 250K (4kHz)	
RV503	1-241-860-11	RES, VAR, SLIDE 250K (1kHz)	
RV504	1-241-860-11	RES, VAR, SLIDE 250K (400Hz)	
RV505	1-241-860-11	RES, VAR, SLIDE 250K (100Hz)	

Ref. No.	Part No.	Description	Remarks
RV551	1-241-860-11	RES, VAR, SLIDE 250K (12kHz)	
RV552	1-241-860-11	RES, VAR, SLIDE 250K (4kHz)	
RV553	1-241-860-11	RES, VAR, SLIDE 250K (1kHz)	
RV554	1-241-860-11	RES, VAR, SLIDE 250K (400Hz)	
RV555	1-241-860-11	RES, VAR, SLIDE 250K (100Hz)	
< SWITCH >			
S201	1-572-184-11	SWITCH, KEYBOARD (EDIT)	
S202	1-572-184-11	SWITCH, KEYBOARD (■)	
S203	1-572-184-11	SWITCH, KEYBOARD (▶)	
S204	1-572-184-11	SWITCH, KEYBOARD (OPEN/CLOSE)	
S205	1-572-184-11	SWITCH, KEYBOARD (▶▶)	
S206	1-572-184-11	SWITCH, KEYBOARD (◀◀)	
S207	1-572-184-11	SWITCH, KEYBOARD (▶▶)	
S208	1-572-184-11	SWITCH, KEYBOARD (◀◀)	
S209	1-572-184-11	SWITCH, KEYBOARD (REPEAT)	
S210	1-572-184-11	SWITCH, KEYBOARD (CONTINUE)	
S211	1-572-184-11	SWITCH, KEYBOARD (SHUFFLE)	
S212	1-572-184-11	SWITCH, KEYBOARD (PROGRAM)	
S214	1-572-184-11	SWITCH, KEYBOARD (TIME)	
S350	1-553-977-00	SWITCH, SLIDE (DOLBY NR)	
S501	1-572-184-11	SWITCH, KEYBOARD (TIMER CONTROL)	
S503	1-572-184-11	SWITCH, KEYBOARD (TIMER SET)	
S504	1-572-184-11	SWITCH, KEYBOARD (CLOCK SET)	
S505	1-572-184-11	SWITCH, KEYBOARD (CLOCK DISPLAY)	
S506	1-572-184-11	SWITCH, KEYBOARD (POWER)	
S507	1-572-184-11	SWITCH, KEYBOARD (DBFB)	
S508	1-572-184-11	SWITCH, KEYBOARD (S-SUR)	
S509	1-572-184-11	SWITCH, KEYBOARD (TAPE)	
S510	1-572-184-11	SWITCH, KEYBOARD (CD)	
S511	1-572-184-11	SWITCH, KEYBOARD (TUNER)	
S512	1-572-184-11	SWITCH, KEYBOARD (VIDEO/AUX)	
S513	1-572-184-11	SWITCH, KEYBOARD (BAND)	
S514	1-572-184-11	SWITCH, KEYBOARD (-)	
S515	1-572-184-11	SWITCH, KEYBOARD (+)	
S516	1-572-184-11	SWITCH, KEYBOARD (AUTO)	
S517	1-572-184-11	SWITCH, KEYBOARD (MEMORY)	
S518	1-572-184-11	SWITCH, KEYBOARD (ENTER)	
S519	1-572-184-11	SWITCH, KEYBOARD (NEXT)	
S520	1-572-184-11	SWITCH, KEYBOARD (SHIFT)	
S521	1-572-184-11	SWITCH, KEYBOARD (-)	
S522	1-572-184-11	SWITCH, KEYBOARD (+)	
S901	1-571-722-11	SWITCH, VOLTAGE SELECTION (H150:E, EA, JE, AUS)	
< VIBRATOR >			
X501	1-567-821-21	VIBRATOR, CRYSTAL 4.19MHz	
X502	1-527-997-21	VIBRATOR, CRYSTAL 32kHz	

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## Note:

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

## Note:

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

## DISPLAY

## LOADING

## MAIN

## POWER

## CHAMICAL CONDENSOR

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
	* 1-634-461-11	LOADING BOARD		C52	1-164-056-11	CERAMIC 27PF 5% 50V	
	*****			C53	1-161-379-00	CERAMIC 0.01uF 20% 25V	
	< CONNECTOR >			C54	1-161-379-00	CERAMIC 0.01uF 20% 25V	
CN291	* 1-564-498-11	PIN, CONNECTOR 5P		C55	1-161-379-00	CERAMIC 0.01uF 20% 25V	
	< SWITCH >			C56	1-161-379-00	CERAMIC 0.01uF 20% 25V	
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)		C57	1-161-379-00	CERAMIC 0.01uF 20% 25V	
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)		C58	1-124-907-11	ELECT 10uF 20% 50V	
	*****			C59	1-161-379-00	CERAMIC 0.01uF 20% 25V	
	* A-4343-711-A	MAIN BOARD, COMPLETE (H150:G, IT)		C60	1-124-477-11	ELECT 47uF 20% 25V	
	*****			C61	1-124-925-11	ELECT 2.2uF 20% 100V	
	* A-4343-709-A	MAIN BOARD, COMPLETE (H150:AEP)		C62	1-136-153-00	FILM 0.01uF 5% 50V	
	*****			C63	1-124-463-00	ELECT 0.1uF 20% 50V	
	* A-4343-694-A	MAIN BOARD, COMPLETE (H150:E, EA, JE, AUS)		C64	1-124-902-00	ELECT 0.47uF 20% 50V	(H150:AEP, EE, G, IT/H500)
	*****			C65	1-136-157-00	FILM 0.022uF 5% 50V	(H150:AEP, EE, G, IT/H500)
	* A-4343-538-A	MAIN BOARD, COMPLETE (H500)		C66	1-136-157-00	FILM 0.022uF 5% 50V	(H150:AEP, EE, G, IT/H500)
	*****			C67	1-162-282-31	CERAMIC 100PF 10% 50V	
	* A-4343-537-A	MAIN BOARD, COMPLETE (H150:US, CND)		C81	1-161-379-00	CERAMIC 0.01uF 20% 25V	
	*****			C82	1-124-472-11	ELECT 470uF 20% 10V	
	* A-4343-710-A	MAIN BOARD, COMPLETE (H150:EE)		C83	1-161-379-00	CERAMIC 0.01uF 20% 25V	
	*****			C84	1-124-907-11	ELECT 10uF 20% 50V	
	* 1-634-849-13	POWER BOARD		C85	1-161-379-00	CERAMIC 0.01uF 20% 25V	
	*****			C86	1-162-282-31	CERAMIC 100PF 10% 50V	
	* 1-634-850-13	CHAMICAL CONDENSOR BOARD		C87	1-161-379-00	CERAMIC 0.01uF 20% 25V	
	*****			C88	1-124-907-11	ELECT 10uF 20% 50V	
	< CAPACITOR >			C89	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C1	1-162-195-31	CERAMIC 4.7PF 10% 50V	(EXCEPT H150:US, CND, G, IT)	C90	1-124-477-11	ELECT 47uF 20% 25V	
C2	1-124-907-11	ELECT 10uF 20% 50V		C91	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C3	1-161-379-00	CERAMIC 0.01uF 20% 25V		C92	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C4	1-162-294-31	CERAMIC 0.001uF 10% 50V		C93	1-161-375-00	CERAMIC 0.0022uF 20% 50V	
C5	1-161-379-00	CERAMIC 0.01uF 20% 25V		C94	1-161-375-00	CERAMIC 0.0022uF 20% 50V	
C6	1-164-159-11	CERAMIC 0.1uF 50V	(H150:E, EA, JE, AUS)	C95	1-124-903-11	ELECT 1uF 20% 50V	
C7	1-164-159-11	CERAMIC 0.1uF 50V	(EXCEPT H150:US, CND)	C96	1-124-903-11	ELECT 1uF 20% 50V	
C8	1-161-379-00	CERAMIC 0.01uF 20% 25V	(H150:AEP, EE, G, IT/H500)	C97	1-124-903-11	ELECT 1uF 20% 50V	
C9	1-102-120-00	CERAMIC 0.0018uF 10% 50V	(H150:AEP, EE, G, IT/H500)	C98	1-124-903-11	ELECT 1uF 20% 50V	
C10	1-161-374-11	CERAMIC 0.0015uF 20% 50V	(H150:AEP, EE, G, IT/H500)	C99	1-136-154-00	FILM 0.012uF 5% 50V	(EXCEPT H150:US, CND)
C21	1-161-379-00	CERAMIC 0.01uF 20% 25V	(H150:E, EA, JE, AUS)	C99	1-136-155-00	FILM 0.015uF 5% 50V	(H150:US, CND)
C22	1-102-947-00	CERAMIC 10PF 5% 50V	(H150:EA, JE, AUS)	C100	1-136-154-00	FILM 0.012uF 5% 50V	(EXCEPT H150:US, CND)
C23	1-136-162-00	FILM 0.056uF 5% 50V	(H150:E, EA, JE, AUS)	C100	1-136-155-00	FILM 0.015uF 5% 50V	(H150:US, CND)
C24	1-136-161-00	FILM 0.047uF 5% 50V	(H150:E, EA, JE, AUS)	C101	1-124-907-11	ELECT 10uF 20% 50V	
C51	1-164-056-11	CERAMIC 27PF 5% 50V		C102	1-161-379-00	CERAMIC 0.01uF 20% 25V	
				C103	1-124-463-00	ELECT 0.1uF 20% 50V	
				C104	1-124-903-11	ELECT 1uF 20% 50V	
				C105	1-124-903-11	ELECT 1uF 20% 50V	
				C106	1-124-903-11	ELECT 1uF 20% 50V	
				C107	1-162-282-31	CERAMIC 100PF 10% 50V	(H150:G, IT)

## MAIN

## POWER

## CHAMICAL CONDENSOR

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
C108	1-162-211-31	CERAMIC 33PF 5% 50V (EXCEPT H150:G, IT)		C623	1-130-474-00	MYLAR 0.0018uF 5% 50V (H150:AEP, EE, G, IT/H500)	
C108	1-162-291-31	CERAMIC 560PF 5% 50V (H150:G, IT)		C624	1-130-480-00	MYLAR 0.0056uF 5% 50V (H150:AEP, EE, G, IT/H500)	
C109	1-161-379-00	CERAMIC 0.01uF 20% 25V		C625	1-124-907-11	ELECT 10uF 20% 50V (H150:AEP, EE, G, IT/H500)	
C110	1-161-379-00	CERAMIC 0.01uF 20% 25V		C626	1-124-903-11	ELECT 1uF 20% 50V	
C111	1-124-925-11	ELECT 2.2uF 20% 100V		C627	1-162-294-31	CERAMIC 0.001uF 10% 50V (H150:G, IT)	
C112	1-161-379-00	CERAMIC 0.01uF 20% 25V		C627	1-162-282-31	CERAMIC 100PF 10% 50V (H150:AEP, EE/H500)	
C114	1-161-379-00	CERAMIC 0.01uF 20% 25V		C628	1-161-294-31	CERAMIC 0.001uF 10% 50V (H150:AEP, EE, G, IT/H500)	
C116	1-161-379-00	CERAMIC 0.01uF 20% 25V		C651	1-162-293-31	CERAMIC 820PF 10% 50V	
C117	1-161-379-00	CERAMIC 0.01uF 20% 25V		C652	1-162-282-31	CERAMIC 100PF 10% 50V	
C131	1-161-379-00	CERAMIC 0.01uF 20% 25V		C653	1-136-157-00	FILM 0.022uF 5% 50V	
C132	1-162-207-31	CERAMIC 22pF 5% 50V (H150:EE, G, IT)		C654	1-126-157-11	ELECT 10uF 20% 16V	
C201	1-164-159-11	CERAMIC 0.1uF 50V		C657	1-162-294-31	CERAMIC 0.001PF 10% 50V (H150:G, IT)	
C211	1-136-161-00	FILM 0.047uF 5% 50V		C657	1-162-282-31	CERAMIC 100PF 10% 50V (H150:AEP, EE/H500)	
C212	1-161-374-11	CERAMIC 0.0015uF 20% 50V		C658	1-161-379-00	CERAMIC 0.01uF 20% 25V (H150:AEP, EE, G, IT/H500)	
C213	1-161-379-00	CERAMIC 0.01uF 20% 25V		C659	1-136-161-00	FILM 0.047uF 5% 50V	
C214	1-124-465-00	ELECT 0.47uF 20% 50V		C661	1-162-293-31	CERAMIC 820PF 10% 50V	
C215	1-164-159-11	CERAMIC 0.1uF 50V		C662	1-162-282-31	CERAMIC 100PF 10% 50V	
C221	1-162-207-31	CERAMIC 22PF 5% 50V		C663	1-136-157-00	FILM 0.022uF 5% 50V	
C222	1-162-207-31	CERAMIC 22PF 5% 50V		C664	1-124-907-11	ELECT 10uF 20% 50V	
C223	1-124-443-00	ELECT 100uF 20% 10V		C671	1-162-282-31	CERAMIC 100PF 10% 50V	
C225	1-136-165-00	FILM 0.1uF 5% 50V		C672	1-162-282-31	CERAMIC 100PF 10% 50V	
C229	1-124-907-11	ELECT 10uF 20% 50V		C673	1-130-474-00	MYLAR 0.0018uF 5% 50V (H150:AEP, EE, G, IT/H500)	
C231	1-161-374-11	CERAMIC 0.0015uF 20% 50V		C674	1-130-480-00	MYLAR 0.0056uF 5% 50V (H150:AEP, EE, G, IT/H500)	
C232	1-161-374-11	CERAMIC 0.0015uF 20% 50V		C675	1-124-907-11	ELECT 10uF 20% 50V (H150:AEP, EE, G, IT/H500)	
C233	1-162-286-31	CERAMIC 220PF 10% 50V		C676	1-124-903-11	ELECT 1uF 20% 50V	
C234	1-162-286-31	CERAMIC 220PF 10% 50V		C701	1-162-290-31	CERAMIC 470PF 10% 50V	
C235	1-124-903-11	ELECT 1uF 20% 50V		C702	1-162-290-31	CERAMIC 470PF 10% 50V	
C236	1-124-903-11	ELECT 1uF 20% 50V		C703	1-124-254-00	ELECT 0.68uF 20% 50V	
C237	1-124-907-11	ELECT 10uF 20% 50V		C704	1-124-907-11	ELECT 10uF 20% 50V	
C238	1-124-907-11	ELECT 10uF 20% 50V		C705	1-126-157-11	ELECT 10uF 20% 16V	
C251	1-162-282-31	CERAMIC 100PF 10% 50V		C706	1-124-902-00	ELECT 0.47uF 20% 50V	
C252	1-162-282-31	CERAMIC 100PF 10% 50V		C707	1-124-925-11	ELECT 2.2uF 20% 100V	
C253	1-162-282-31	CERAMIC 100PF 10% 50V		C709	1-124-907-11	ELECT 10uF 20% 50V	
C254	1-162-282-31	CERAMIC 100PF 10% 50V		C710	1-162-288-31	CERAMIC 330PF 10% 50V	
C255	1-162-282-31	CERAMIC 100PF 10% 50V		C711	1-162-282-31	CERAMIC 100PF 10% 50V	
C256	1-161-379-00	CERAMIC 0.01uF 20% 25V		C712	1-124-443-00	ELECT 100uF 20% 10V	
C257	1-161-379-00	CERAMIC 0.01uF 20% 25V		C713	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C258	1-161-379-00	CERAMIC 0.01uF 20% 25V		C714	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C601	1-162-293-31	CERAMIC 820PF 10% 50V		C721	1-161-374-11	CERAMIC 0.0015uF 20% 50V	
C602	1-162-282-31	CERAMIC 100PF 10% 50V		C722	1-161-329-00	CERAMIC 0.0068uF 30% 16V	
C603	1-136-157-00	FILM 0.022uF 5% 50V		C723	1-124-903-11	ELECT 1uF 20% 50V	
C604	1-126-157-11	ELECT 10uF 20% 16V		C724	1-124-925-11	ELECT 2.2uF 20% 100V	
C609	1-136-161-00	FILM 0.047uF 5% 50V					
C610	1-161-379-00	CERAMIC 0.01uF 20% 25V					
C611	1-162-293-31	CERAMIC 820PF 10% 50V					
C612	1-162-282-31	CERAMIC 100PF 10% 50V					
C613	1-136-157-00	FILM 0.022uF 5% 50V					
C614	1-124-907-11	ELECT 10uF 20% 50V					
C621	1-162-282-31	CERAMIC 100PF 10% 50V					
C622	1-162-282-31	CERAMIC 100PF 10% 50V					

## MAIN

## POWER

## CHAMICAL CONDENSOR

Ref. No.	Part No.	Description	Remarks
C725	1-136-153-00	FILM 0.01uF 5% 50V (H150:AEP, EE, G, IT/H500)	
C725	1-136-154-00	FILM 0.012uF 5% 50V (H150:E, US, CND, EA, JE, AUS)	
C726	1-130-475-00	MYLAR 0.0022uF 5% 50V (H150:AEP, EE, G, IT/H500)	
C727	1-130-475-00	MYLAR 0.0022uF 5% 50V (H150:AEP, EE, G, IT/H500)	
C728	1-162-286-31	CERAMIC 220PF 10% 50V	
C729	1-162-286-31	CERAMIC 220PF 10% 50V	
C731	1-124-927-11	ELECT 4.7uF 20% 100V	
C735	1-124-907-11	ELECT 10uF 20% 50V	
C736	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C737	1-124-443-00	ELECT 100uF 20% 10V	
C738	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C739	1-164-159-11	CERAMIC 0.1uF 50V	
C740	1-164-159-11	CERAMIC 0.1uF 50V (H150:US, CND)	
C751	1-162-290-31	CERAMIC 470PF 10% 50V	
C752	1-162-290-31	CERAMIC 470PF 10% 50V	
C753	1-124-254-00	ELECT 0.68uF 20% 50V	
C754	1-124-907-11	ELECT 10uF 20% 50V	
C755	1-126-157-11	ELECT 10uF 20% 16V	
C756	1-124-902-00	ELECT 0.47uF 20% 50V	
C757	1-124-925-11	ELECT 2.2uF 20% 100V	
C759	1-124-907-11	ELECT 10uF 20% 50V	
C760	1-162-288-31	CERAMIC 330PF 10% 50V	
C761	1-162-282-31	CERAMIC 100PF 10% 50V	
C764	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C795	1-124-907-11	ELECT 10uF 20% 50V	
C801	1-124-907-11	ELECT 10uF 20% 50V	
C802	1-162-290-31	CERAMIC 470PF 10% 50V	
C803	1-126-233-11	ELECT 22uF 20% 50V	
C804	1-164-159-11	CERAMIC 0.1uF 50V	
C805	1-164-159-11	CERAMIC 0.1uF 50V	
C851	1-124-907-11	ELECT 10uF 20% 50V	
C852	1-162-290-31	CERAMIC 470PF 10% 50V	
C853	1-126-233-11	ELECT 22uF 20% 50V	
C854	1-164-159-11	CERAMIC 0.1uF 50V	
C855	1-164-159-11	CERAMIC 0.1uF 50V	
C871	1-124-618-11	ELECT 2200uF 20% 35V	
C872	1-124-618-11	ELECT 2200uF 20% 35V	
C873	1-124-120-11	ELECT 220uF 20% 25V	
C874	1-124-484-11	ELECT 220uF 20% 35V	
C875	1-124-907-11	ELECT 10uF 20% 50V	
C876	1-124-907-11	ELECT 10uF 20% 50V	
C877	1-124-907-11	ELECT 10uF 20% 50V	
C878	1-124-910-11	ELECT 47uF 20% 50V	
C879	1-124-910-11	ELECT 47uF 20% 50V	
C880	1-124-910-11	ELECT 47uF 20% 50V	
C899	1-164-159-11	CERAMIC 0.1uF 50V	
C996	1-124-927-11	ELECT 4.7uF 20% 100V	

Ref. No.	Part No.	Description	Remarks
C997	1-124-903-11	ELECT 1uF 20% 50V	
C998	1-126-176-11	ELECT 220uF 20% 10V	
C999	1-124-907-11	ELECT 10uF 20% 50V	
C1001	1-162-282-31	CERAMIC 100uF 10% 50V (H150:G, IT)	
C1002	1-162-288-31	CERAMIC 330PF 10% 50V (H150:G, IT)	
C1003	1-162-294-31	CERAMIC 0.001uF 10% 50V (H150:G, IT)	
C1004	1-162-294-31	CERAMIC 0.001uF 10% 50V (H150:G, IT)	
C1005	1-162-294-31	CERAMIC 0.001uF 10% 50V (H150:G, IT)	
C1006	1-162-294-31	CERAMIC 0.001uF 10% 50V (H150:G, IT)	
C1007	1-164-159-31	CERAMIC 0.1uF 50V (H150:G, IT)	
C1008	1-164-159-31	CERAMIC 0.1uF 50V (H150:G, IT)	
C1009	1-161-379-00	CERAMIC 0.01uF 20% 25V (H150:G, IT)	
C1010	1-161-379-00	CERAMIC 0.01uF 20% 25V (H150:G, IT)	
C1011	1-161-379-00	CERAMIC 0.01uF 20% 25V (H150:G, IT)	
C1012	1-161-379-00	CERAMIC 0.01uF 20% 25V (H150:G, IT)	
C1013	1-161-379-00	CERAMIC 0.01uF 20% 25V (H150:G, IT)	
C1014	1-161-379-00	CERAMIC 0.01uF 20% 25V (H150:G, IT)	
C1015	1-161-379-00	CERAMIC 0.01uF 20% 25V (H150:G, IT)	
C1017	1-161-379-00	CERAMIC 0.01uF 20% 25V	
C1019	1-164-159-11	CERAMIC 0.1uF 50V (H150:G, IT)	
C1020	1-164-159-11	CERAMIC 0.1uF 50V (H150:G, IT)	
C1021	1-164-159-11	CERAMIC 0.1uF 50V (H150:G, IT)	
C1022	1-162-294-31	CERAMIC 0.001uF 10% 50V (H150:G, IT)	
C1023	1-162-294-31	CERAMIC 0.001uF 10% 50V (H150:G, IT)	
C2001	1-161-379-00	CERAMIC 0.01uF 20% 25V (H150:G, IT)	

## &lt; CIRCUIT BREAKER &gt;

CB801  $\Delta$  1-532-564-00 BREAKER, CIRCUIT  
 CB851  $\Delta$  1-532-564-00 BREAKER, CIRCUIT

## &lt; FILTER &gt;

CF1 1-567-389-11 FILTER, CERAMIC  
 CF2 1-567-389-11 FILTER, CERAMIC (H150:G, IT, AUS)  
 CF81 1-567-389-11 FILTER, CERAMIC

## &lt; CONNECTOR &gt;

CN201 \* 1-569-155-11 PLUG, CONNECTOR 10P  
 CN202 1-568-802-11 SOCKET, CONNECTOR 19P  
 CN253 \* 1-564-339-71 PIN, CONNECTOR 5P  
 CN601 1-564-507-11 PLUG, CONNECTOR 4P  
 CN602 \* 1-564-509-11 PLUG, CONNECTOR 6P  
 CN701 \* 1-569-155-11 PLUG, CONNECTOR 10P  
 CN702 \* 1-569-155-11 PLUG, CONNECTOR 10P  
 CN703 \* 1-568-832-11 SOCKET, CONNECTOR 13P  
 CN704 \* 1-568-834-11 SOCKET, CONNECTOR 15P  
 CN721 \* 1-564-505-11 PLUG, CONNECTOR 2P  
 CN751 \* 1-564-336-00 PIN, CONNECTOR 2P  
 CN785 \* 1-564-339-00 PIN, CONNECTOR 5P  
 CN786 \* 1-564-340-00 PIN, CONNECTOR 6P  
 CN801 \* 1-508-694-00 CONNECTOR PIN 8P  
 CN802 \* 1-564-706-11 PIN, CONNECTOR (SMALL TYPE) 4P

**Note:**  
 The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

**Note:**  
 Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



## MAIN

## POWER

## CHEMICAL CONDENSOR

Ref. No.	Part No.	Description	Remarks
< TRIMMER >			
CT21	1-141-227-00	CAP, TRIMMER 20PF (H150:E, EA, JE, AUS)	
CT22	1-141-227-00	CAP, TRIMMER 20PF (H150:E, EA, JE, AUS)	
< DIODE >			
D21	8-719-902-79	DIODE KV1236Z (H150:E, EA, JE, AUS)	
D201	8-719-010-34	DIODE UZ-4. 7BSC	
D205	8-719-987-63	DIODE 1N4148M	
D601	8-719-987-63	DIODE 1N4148M	
D701	8-719-933-48	DIODE HZS7B3L	
D721	8-719-987-63	DIODE 1N4148M	
D735	8-719-933-36	DIODE HZS6B1L	
D736	8-719-987-63	DIODE 1N4148M	
D737	8-719-987-63	DIODE 1N4148M	
D738	8-719-987-63	DIODE 1N4148M	
D739	8-719-987-63	DIODE 1N4148M	
D785	8-719-987-63	DIODE 1N4148M	
D786	8-719-987-63	DIODE 1N4148M	
D787	8-719-987-63	DIODE 1N4148M	
D788	8-719-987-63	DIODE 1N4148M	
D789	8-719-987-63	DIODE 1N4148M	
D790	8-719-987-63	DIODE 1N4148M	
D791	8-719-987-63	DIODE 1N4148M	
D792	8-719-987-63	DIODE 1N4148M	
D793	8-719-987-63	DIODE 1N4148M	
D801	8-719-912-20	DIODE 1SS120	
< FRONTEND >			
FB1001	1-410-858-11	INDUCTOR 0uH (H150:G, IT)	
FB1002	1-410-858-11	INDUCTOR 0uH (H150:G, IT)	
FE1	1-465-007-11	FRONTEND FM (4 GAUG) (H150:G, IT)	
FE1	1-465-396-11	FRONTEND (3 GAUG) (H150:EE)	
FE1	1-465-673-11	FRONTEND (2 BAND) (EXCEPT H150:EE, G, IT)	
FE2	1-236-462-11	ENCAPSULATED COMPONENT (H150:AEP, EE, G, IT/H500)	
FE2	1-236-777-11	ENCAPSULATED COMPONENT (H150:E, EA, JE, AUS)	
FE2	1-236-461-11	ENCAPSULATED COMPONENT (H150:US, CND)	
FE3	1-236-463-11	ENCAPSULATED COMPONENT (H150:AEP, EE, G, IT/H500)	
FL81	1-236-465-11	ENCAPSULATED COMPONENT (H150:G, IT)	
< IC >			
IC51	8-759-239-29	IC TC9217P	
IC81	8-759-821-45	IC LA1851N	
IC201	8-759-150-19	IC uPD75112CW-064	
IC202	8-752-337-26	IC CXD2500AQ	
IC221	8-752-337-09	IC CXD2554P	
IC222	8-759-990-13	IC TDA1543A	
IC223	8-759-634-51	IC M5218AP	
IC253	8-759-633-65	IC M54641L	
IC601	8-759-112-93	IC uPC4570HA-1	
IC602	8-759-140-53	IC uPD4053BC	

Ref. No.	Part No.	Description	Remarks
IC621	8-759-634-50	IC M5218AL (H150:AEP, EE, G, IT/H500)	
IC661	8-759-112-93	IC uPC4570HA-1	
IC701	8-759-634-50	IC M5218AL	
IC702	8-752-057-19	IC CXA1101P	
IC703	8-759-000-49	IC MC14066BCP	
IC704	8-752-038-00	IC CXA1298AP	
IC705	8-759-000-48	IC MC14052BCP	
IC706	8-759-605-16	IC M51953BL	
IC785	8-759-040-01	IC MC14001BCP	
IC801	8-749-920-19	IC STK4122MK2	
IC999	8-759-821-93	IC LA5601	
< IFT >			
IFT81	1-404-853-11	TRANSFORMER, IF (CERAMIC FILTER)	
IFT82	1-404-807-11	TRANSFORMER, DISCRIMINATOR	
< JACK >			
J701	1-569-181-11	JACK, PIN 2P (VIDEO/AUX)	
< COIL >			
L1	1-408-425-00	INDUCTOR 220uH (H150:AEP, G, IT/H500)	
L81	1-408-399-00	INDUCTOR 1.5uH	
L83	1-410-489-11	INDUCTOR 390uH	
L701	1-410-779-21	INDUCTOR 22mH	
L721	1-410-489-11	INDUCTOR 390uH	
L751	1-410-779-21	INDUCTOR 22mH	
L1001	1-410-521-11	INDUCTOR 100uH (H150:G, IT)	
< FILTER >			
LPF81	1-235-164-00	FILTER, LOW PASS	
LPF82	1-235-164-00	FILTER, LOW PASS	
< TRANSISTOR >			
Q1	8-729-620-19	TRANSISTOR 2SC2724-CD	
Q2	8-729-620-19	TRANSISTOR 2SC2724-CD (H150:G, IT)	
Q3	8-729-900-80	TRANSISTOR DTC114ES	
Q4	8-729-900-61	TRANSISTOR DTA114ES	
Q5	8-729-900-80	TRANSISTOR DTC114ES (EXCEPT H150:US, CND)	
Q6	8-729-900-80	TRANSISTOR DTC114ES (EXCEPT H150:US, CND)	
Q7	8-729-119-76	TRANSISTOR 2SA1175-HFE (EXCEPT H150:US, CND)	
Q8	8-729-620-05	TRANSISTOR 2SC2603-EF (EXCEPT H150:US, CND)	
Q9	8-729-900-80	TRANSISTOR DTC114ES (EXCEPT H150:US, CND)	
Q10	8-729-900-74	TRANSISTOR DTC143TS (H150:AEP, EE, G, IT/H500)	
Q10	8-729-900-80	TRANSISTOR DTC114ES (H150:E, EA, JE, AUS)	
Q51	8-729-202-67	TRANSISTOR 2SK246-GR3	
Q52	8-729-201-84	TRANSISTOR 2SC3112-B	
Q53	8-729-202-67	TRANSISTOR 2SK246-GR3 (H150:AEP, EE, G, IT/H500)	
Q54	8-729-201-84	TRANSISTOR 2SC3112-B (H150:AEP, EE, G, IT/H500)	

## MAIN

## POWER

## CHAMICAL CONDENSOR

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
Q101	8-729-620-05	TRANSISTOR	2SC2603-EF	R11	1-249-421-11	CARBON	2. 2K 5% 1/4W (H150:AEP, EE, G, IT/H500)
Q102	8-729-620-05	TRANSISTOR	2SC2603-EF	R12	1-249-421-11	CARBON	2. 2K 5% 1/4W (H150:AEP, EE, G, IT/H500)
Q103	8-729-900-80	TRANSISTOR	DTC114ES	R12	1-249-429-11	CARBON	10K 5% 1/4W (H150:E, EA, JE, AUS)
Q201	8-729-620-05	TRANSISTOR	2SC2603-EF	R13	1-249-433-11	CARBON	22K 5% 1/4W (H150:AEP, EE, G, IT/H500)
Q231	8-729-141-26	TRANSISTOR	2SC3622A-LK	R14	1-249-432-11	CARBON	18K 5% 1/4W (H150:AEP, EE, G, IT/H500)
Q232	8-729-141-26	TRANSISTOR	2SC3622A-LK	R15	1-247-903-00	CARBON	1M 5% 1/4W (H150:AEP, EE, G, IT/H500)
Q233	8-729-900-65	TRANSISTOR	DTA144ES	R20	1-249-425-11	CARBON	4. 7K 5% 1/4W (EXCEPT H150:US, CND)
Q234	8-729-900-80	TRANSISTOR	DTC114ES	R21	1-249-429-11	CARBON	10K 5% 1/4W (H150:E, EA, JE, AUS)
Q252	8-729-900-80	TRANSISTOR	DTC114ES	R22	1-249-429-11	CARBON	10K 5% 1/4W (H150:E, EA, JE, AUS)
Q253	8-729-900-80	TRANSISTOR	DTC114ES	R23	1-249-407-11	CARBON	150 5% 1/4W (H150:US, CND)
Q601	8-729-904-39	TRANSISTOR	DTC114TS	R50	1-249-441-11	CARBON	100K 5% 1/4W
Q603	8-729-900-80	TRANSISTOR	DTC114ES	R51	1-249-417-11	CARBON	1K 5% 1/4W
Q651	8-729-904-39	TRANSISTOR	DTC114TS	R52	1-249-417-11	CARBON	1K 5% 1/4W
Q721	8-729-801-93	TRANSISTOR	2SD1387	R53	1-249-441-11	CARBON	100K 5% 1/4W
Q722	8-729-620-05	TRANSISTOR	2SC2603-EF	R54	1-249-417-11	CARBON	1K 5% 1/4W
Q723	8-729-900-80	TRANSISTOR	DTC114ES	R55	1-249-425-11	CARBON	4. 7K 5% 1/4W
Q731	8-729-904-39	TRANSISTOR	DTC114TS	R56	1-249-405-11	CARBON	100 5% 1/4W
Q732	8-729-900-61	TRANSISTOR	DTA114ES	R57	1-249-401-11	CARBON	47 5% 1/4W
Q735	8-729-111-29	TRANSISTOR	2SD1616A-K	R58	1-249-423-11	CARBON	3. 3K 5% 1/4W
Q736	8-729-209-15	TRANSISTOR	2SD2012 (EXCEPT H150:US, CND)	R59	1-249-414-11	CARBON	560 5% 1/4W
Q736	8-729-140-98	TRANSISTOR	2SD773 (H150:US, CND)	R60	1-249-417-11	CARBON	1K 5% 1/4W
Q738	8-729-900-61	TRANSISTOR	DTA114ES	R61	1-249-410-11	CARBON	270 5% 1/4W
Q739	8-729-900-89	TRANSISTOR	DTC144ES	R62	1-249-418-11	CARBON	1. 2K 5% 1/4W
Q740	8-729-900-89	TRANSISTOR	DTC144ES	R63	1-249-421-11	CARBON	2. 2K 5% 1/4W
Q781	8-729-904-39	TRANSISTOR	DTC114TS	R64	1-249-425-11	CARBON	4. 7K 5% 1/4W
Q785	8-729-801-93	TRANSISTOR	2SD1387	R65	1-249-425-11	CARBON	4. 7K 5% 1/4W
Q786	8-729-900-80	TRANSISTOR	DTC114ES	R66	1-249-405-11	CARBON	100 5% 1/4W
Q787	8-729-900-80	TRANSISTOR	DTC114ES	R67	1-249-423-11	CARBON	3. 3K 5% 1/4W (H150:AEP, EE, G, IT/H500)
Q789	8-729-900-80	TRANSISTOR	DTC114ES	R68	1-249-414-11	CARBON	560 5% 1/4W (H150:AEP, EE, G, IT/H500)
Q790	8-729-900-80	TRANSISTOR	DTC114ES	R69	1-249-417-11	CARBON	1K 5% 1/4W (H150:AEP, EE, G, IT/H500)
Q801	8-729-900-80	TRANSISTOR	DTC114ES	R70	1-249-410-11	CARBON	270 5% 1/4W (H150:AEP, EE, G, IT/H500)
Q999	8-729-900-80	TRANSISTOR	DTC114ES	R71	1-249-433-11	CARBON	22K 5% 1/4W (H150:AEP, EE, G, IT/H500)
< RESISTOR >				R72	1-249-421-11	CARBON	2. 2K 5% 1/4W (H150:AEP, EE, G, IT/H500)
R1	1-249-411-11	CARBON	330 5% 1/4W	R73	1-249-425-11	CARBON	4. 7K 5% 1/4W (H150:AEP, EE, G, IT/H500)
R2	1-249-393-11	CARBON	10 5% 1/4W (H150:G, IT)	R74	1-249-425-11	CARBON	4. 7K 5% 1/4W (H150:AEP, EE, G, IT/H500)
R2	1-249-411-11	CARBON	330 5% 1/4W (EXCEPT H150:G, IT)				
R3	1-247-891-00	CARBON	330K 5% 1/4W				
R4	1-249-411-11	CARBON	330 5% 1/4W				
R5	1-247-891-00	CARBON	330K 5% 1/4W (H150:G, IT)				
R6	1-249-411-11	CARBON	330 5% 1/4W (H150:G, IT)				
R7	1-249-405-11	CARBON	100 5% 1/4W				
R8	1-249-441-11	CARBON	100K 5% 1/4W				
R9	1-249-437-11	CARBON	47K 5% 1/4W				
R10	1-249-425-11	CARBON	4. 7K 5% 1/4W (H150:AEP, EE, G, IT/H500)				
R10	1-249-421-11	CARBON	2. 2K 5% 1/4W (H150:E, EA, JE, AUS)				
R11	1-249-429-11	CARBON	10K 5% 1/4W (H150:E, EA, JE, AUS)				

MAIN	POWER	CHAMICAL CONDENSOR
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Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R75	1-249-393-11	CARBON 10 5% 1/4W		R224	1-249-417-11	CARBON 1K 5% 1/4W	
R81	1-249-433-11	CARBON 22K 5% 1/4W		R225	1-249-417-11	CARBON 1K 5% 1/4W	
R82	1-249-417-11	CARBON 1K 5% 1/4W		R226	1-249-417-11	CARBON 1K 5% 1/4W	
R83	1-249-399-11	CARBON 33 5% 1/4W		R231	1-249-429-11	CARBON 10K 5% 1/4W	
R84	1-249-429-11	CARBON 10K 5% 1/4W		R232	1-249-425-11	CARBON 4.7K 5% 1/4W	
R85	1-249-429-11	CARBON 10K 5% 1/4W		R233	1-249-429-11	CARBON 10K 5% 1/4W	
R86	1-249-437-11	CARBON 47K 5% 1/4W		R234	1-249-393-11	CARBON 10 5% 1/4W	
R87	1-249-409-11	CARBON 220 5% 1/4W		R235	1-249-417-11	CARBON 1K 5% 1/4W	
R88	1-249-429-11	CARBON 10K 5% 1/4W		R236	1-249-417-11	CARBON 1K 5% 1/4W	
R89	1-249-429-11	CARBON 10K 5% 1/4W		R237	1-249-419-11	CARBON 1.5K 5% 1/4W	
R90	1-249-421-11	CARBON 2.2K 5% 1/4W		R238	1-249-419-11	CARBON 1.5K 5% 1/4W	
R91	1-249-421-11	CARBON 2.2K 5% 1/4W		R239	1-249-433-11	CARBON 22K 5% 1/4W	
R92	1-247-891-00	CARBON 330K 5% 1/4W		R241	1-249-413-11	CARBON 470 5% 1/4W	
R93	1-247-891-00	CARBON 330K 5% 1/4W		R242	1-249-417-11	CARBON 1K 5% 1/4W	
R94	1-249-417-11	CARBON 1K 5% 1/4W		R243	1-249-411-11	CARBON 330 5% 1/4W	
R95	1-249-417-11	CARBON 1K 5% 1/4W		R244	1-249-411-11	CARBON 330 5% 1/4W	
R96	1-249-425-11	CARBON 4.7K 5% 1/4W		R245	1-249-421-11	CARBON 2.2K 5% 1/4W	
R97	1-249-425-11	CARBON 4.7K 5% 1/4W		R247	1-249-433-11	CARBON 22K 5% 1/4W	
R98	1-249-404-00	CARBON 82 5% 1/4W		R248	1-249-421-11	CARBON 2.2K 5% 1/4W	
R99	1-249-417-11	CARBON 1K 5% 1/4W		R249	1-249-429-11	CARBON 10K 5% 1/4W	
(EXCEPT H150:G, IT)				R250	1-249-429-11	CARBON 10K 5% 1/4W	
R99	1-249-420-11	CARBON 1.8K 5% 1/4W (H150:G, IT)		R251	1-249-425-11	CARBON 4.7K 5% 1/4W	
R100	1-247-848-11	CARBON 5.1K 5% 1/4W		R252	1-249-425-11	CARBON 4.7K 5% 1/4W	
R102	1-249-430-11	CARBON 12K 5% 1/4W		R286	1-249-405-11	CARBON 100 5% 1/4W	
R103	1-249-428-11	CARBON 8.2K 5% 1/4W		R287	1-249-405-11	CARBON 100 5% 1/4W	
R104	1-249-435-11	CARBON 33K 5% 1/4W		R288	1-249-405-11	CARBON 100 5% 1/4W	
R105	1-249-431-11	CARBON 15K 5% 1/4W		R289	1-249-405-11	CARBON 100 5% 1/4W	
R106	1-249-417-11	CARBON 1K 5% 1/4W		R290	1-249-405-11	CARBON 100 5% 1/4W	
R107	1-249-431-11	CARBON 12K 5% 1/4W (H150:G, IT)		R291	1-249-413-11	CARBON 470 5% 1/4W	
R132	1-249-417-11	CARBON 1K 5% 1/4W (H150:EE, G, IT)		R292	1-249-413-11	CARBON 470 5% 1/4W	
R201	1-249-441-11	CARBON 100K 5% 1/4W		R293	1-249-413-11	CARBON 470 5% 1/4W	
R202	1-249-441-11	CARBON 100K 5% 1/4W		R294	1-249-413-11	CARBON 470 5% 1/4W	
R203	1-249-422-11	CARBON 2.7K 5% 1/4W		R295	1-249-405-11	CARBON 100 5% 1/4W	
R204	1-249-422-11	CARBON 2.7K 5% 1/4W		R296	1-249-405-11	CARBON 100 5% 1/4W	
R205	1-249-437-11	CARBON 47K 5% 1/4W		R297	1-249-405-11	CARBON 100 5% 1/4W	
R206	1-249-437-11	CARBON 47K 5% 1/4W		R298	1-249-405-11	CARBON 100 5% 1/4W	
R207	1-249-437-11	CARBON 47K 5% 1/4W		R299	1-249-441-11	CARBON 100K 5% 1/4W	
R208	1-249-437-11	CARBON 47K 5% 1/4W		R601	1-247-881-00	CARBON 120K 5% 1/4W	
R209	1-249-441-11	CARBON 100K 5% 1/4W		R602	1-249-405-11	CARBON 100 5% 1/4W	
R210	1-249-437-11	CARBON 47K 5% 1/4W		R603	1-247-882-11	CARBON 130K 5% 1/4W	
R211	1-249-423-11	CARBON 3.3K 5% 1/4W		R604	1-249-426-11	CARBON 5.6K 5% 1/4W	
R212	1-249-423-11	CARBON 3.3K 5% 1/4W		R605	1-249-409-11	CARBON 220 5% 1/4W	
R213	1-249-429-11	CARBON 10K 5% 1/4W		R606	1-249-441-11	CARBON 100K 5% 1/4W	
R214	1-249-437-11	CARBON 47K 5% 1/4W		R607	1-249-418-11	CARBON 1.2K 5% 1/4W	
R215	1-249-429-11	CARBON 10K 5% 1/4W		R609	1-249-420-11	CARBON 1.8K 5% 1/4W	
R216	1-249-441-11	CARBON 100K 5% 1/4W		R610	1-247-887-00	CARBON 220K 5% 1/4W	
R217	1-249-411-11	CARBON 330 5% 1/4W		R611	1-247-881-00	CARBON 120K 5% 1/4W	
R218	1-249-411-11	CARBON 330 5% 1/4W		R612	1-249-405-11	CARBON 100 5% 1/4W	
R219	1-249-417-11	CARBON 1K 5% 1/4W		R613	1-247-882-11	CARBON 130K 5% 1/4W	
R220	1-249-421-11	CARBON 2.2K 5% 1/4W		R614	1-249-426-11	CARBON 5.6K 5% 1/4W	
R223	1-249-417-11	CARBON 1K 5% 1/4W					

## MAIN

## POWER

## CHAMICAL CONDENSOR

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
R615	1-249-409-11	CARBON	220 5% 1/4W	R716	1-249-441-11	CARBON	100K 5% 1/4W
R616	1-249-441-11	CARBON	100K 5% 1/4W	R717	1-249-429-11	CARBON	10K 5% 1/4W
R617	1-249-441-11	CARBON	100K 5% 1/4W	R721	1-249-417-11	CARBON	1K 5% 1/4W
R621	1-249-417-11	CARBON	1K 5% 1/4W	R722	1-249-431-11	CARBON	15K 5% 1/4W
R622	1-249-437-11	CARBON	47K 5% 1/4W	R723	1-249-427-11	CARBON	6.8K 5% 1/4W
							(EXCEPT H150:US,CND)
R623	1-249-437-11	CARBON	47K 5% 1/4W	R724	1-249-437-11	CARBON	47K 5% 1/4W
		(H150:AEP,EE,G,IT/H500)					(H150:AEP,EE,G,IT/H500)
R624	1-247-897-11	CARBON	560K 5% 1/4W	R725	1-249-421-11	CARBON	2.2K 5% 1/4W
		(H150:AEP,EE,G,IT/H500)		R726	1-249-437-11	CARBON	47K 5% 1/4W
R625	1-249-417-11	CARBON	1K 5% 1/4W	R727	1-249-388-11	CARBON	3.9 5% 1/6W
		(H150:AEP,EE,G,IT/H500)		R731	1-249-421-11	CARBON	2.2K 5% 1/4W
R626	1-249-425-11	CARBON	4.7K 5% 1/4W	R732	1-249-425-11	CARBON	4.7K 5% 1/4W
R627	1-249-437-11	CARBON	47K 5% 1/4W	R733	1-249-429-11	CARBON	10K 5% 1/4W
R651	1-247-881-00	CARBON	120K 5% 1/4W	R734	1-249-437-11	CARBON	47K 5% 1/4W
R652	1-249-405-11	CARBON	100 5% 1/4W	R735	1-249-413-11	CARBON	470 5% 1/4W
R653	1-247-882-11	CARBON	130K 5% 1/4W	R736	1-249-411-11	CARBON	330 5% 1/4W
R654	1-249-426-11	CARBON	5.6K 5% 1/4W	R737	1-249-405-11	CARBON	100 5% 1/4W
R655	1-249-409-11	CARBON	220 5% 1/4W	R738	1-249-414-11	CARBON	560 5% 1/4W
R656	1-249-441-11	CARBON	100K 5% 1/4W	R739	1-249-429-11	CARBON	10K 5% 1/4W
R657	1-249-418-11	CARBON	1.2K 5% 1/4W	R740	1-249-429-11	CARBON	10K 5% 1/4W
R659	1-249-420-11	CARBON	1.8K 5% 1/4W	R741	1-249-429-11	CARBON	10K 5% 1/4W
R660	1-247-887-00	CARBON	220K 5% 1/4W	R742	1-249-437-11	CARBON	47K 5% 1/4W
R661	1-247-881-00	CARBON	120K 5% 1/4W	R743	1-249-429-11	CARBON	10K 5% 1/4W
R662	1-249-405-11	CARBON	100 5% 1/4W	R744	1-249-425-11	CARBON	4.7K 5% 1/4W
R663	1-247-882-11	CARBON	130K 5% 1/4W	R747	1-249-405-11	CARBON	100 5% 1/4W
R664	1-249-426-11	CARBON	5.6K 5% 1/4W	R748	1-249-405-11	CARBON	100 5% 1/4W
R665	1-249-409-11	CARBON	220 5% 1/4W	R751	1-249-437-11	CARBON	47K 5% 1/4W
R666	1-249-441-11	CARBON	100K 5% 1/4W	R752	1-249-421-11	CARBON	2.2K 5% 1/4W
R671	1-249-417-11	CARBON	1K 5% 1/4W	R754	1-249-431-11	CARBON	15K 5% 1/4W
R672	1-249-437-11	CARBON	47K 5% 1/4W	R755	1-249-437-11	CARBON	47K 5% 1/4W
R673	1-249-437-11	CARBON	47K 5% 1/4W	R756	1-249-426-11	CARBON	5.6K 5% 1/4W
		(H150:AEP,EE,G,IT/H500)		R758	1-249-437-11	CARBON	47K 5% 1/4W
R674	1-247-897-11	CARBON	560K 5% 1/4W	R760	1-249-437-11	CARBON	47K 5% 1/4W
		(H150:AEP,EE,G,IT/H500)		R761	1-249-429-11	CARBON	10K 5% 1/4W
R675	1-249-417-11	CARBON	1K 5% 1/4W	R762	1-249-426-11	CARBON	5.6K 5% 1/4W
		(H150:AEP,EE,G,IT/H500)		R763	1-249-430-11	CARBON	12K 5% 1/4W
R676	1-249-425-11	CARBON	4.7K 5% 1/4W	R781	1-249-421-11	CARBON	2.2K 5% 1/4W
R677	1-249-437-11	CARBON	47K 5% 1/4W	R782	1-249-425-11	CARBON	4.7K 5% 1/4W
R701	1-249-437-11	CARBON	47K 5% 1/4W	R785	1-249-421-11	CARBON	2.2K 5% 1/4W
R702	1-249-421-11	CARBON	2.2K 5% 1/4W	R786	1-249-421-11	CARBON	2.2K 5% 1/4W
R704	1-249-431-11	CARBON	15K 5% 1/4W	R787	1-249-421-11	CARBON	2.2K 5% 1/4W
R705	1-249-437-11	CARBON	47K 5% 1/4W	R788	1-249-421-11	CARBON	2.2K 5% 1/4W
R706	1-249-426-11	CARBON	5.6K 5% 1/4W	R789	1-249-421-11	CARBON	2.2K 5% 1/4W
R708	1-249-437-11	CARBON	47K 5% 1/4W	R790	1-249-421-11	CARBON	2.2K 5% 1/4W
R709	1-247-870-11	CARBON	43K 5% 1/4W	R791	1-249-429-11	CARBON	10K 5% 1/4W
R710	1-249-437-11	CARBON	47K 5% 1/4W	R792	1-249-418-11	CARBON	1.2K 5% 1/4W
R711	1-249-429-11	CARBON	10K 5% 1/4W	R793	1-249-441-11	CARBON	100K 5% 1/4W
R712	1-249-426-11	CARBON	5.6K 5% 1/4W	R794	1-249-425-11	CARBON	4.7K 5% 1/4W
R713	1-249-430-11	CARBON	12K 5% 1/4W	R795	1-249-429-11	CARBON	10K 5% 1/4W
R714	1-249-429-11	CARBON	10K 5% 1/4W				
R715	1-249-434-11	CARBON	27K 5% 1/4W				

## MAIN

## POWER

## CHAMICAL CONDENSOR

Ref. No.	Part No.	Description	Remarks
R796	1-249-429-11	CARBON 10K 5% 1/4W	
R797	1-249-432-11	CARBON 18K 5% 1/4W	
R798	1-249-421-11	CARBON 2.2K 5% 1/4W	
R801	1-249-417-11	CARBON 1K 5% 1/4W	
R802	1-249-438-11	CARBON 56K 5% 1/4W	
R803	1-249-413-11	CARBON 470 5% 1/4W	
R804	1-249-438-11	CARBON 56K 5% 1/4W	
R805	1-249-389-11	CARBON 4.7 5% 1/4W	
R826	1-249-417-11	CARBON 1K 5% 1/4W	
R851	1-249-417-11	CARBON 1K 5% 1/4W	
R852	1-249-438-11	CARBON 56K 5% 1/4W	
R853	1-249-413-11	CARBON 470 5% 1/4W	
R854	1-249-438-11	CARBON 56K 5% 1/4W	
R855	1-249-389-11	CARBON 4.7 5% 1/4W	
R871	1-249-429-11	CARBON 10K 5% 1/4W	
R872	1-249-437-11	CARBON 47K 5% 1/4W	
R873	1-249-429-11	CARBON 10K 5% 1/4W	
R874	1-247-883-00	CARBON 150K 5% 1/4W	
R875	1-249-421-11	CARBON 2.2K 5% 1/4W	
R876	1-249-421-11	CARBON 2.2K 5% 1/4W	
R877	△ 1-212-881-11	FUSIBLE 100 5% 1/4W F	
R878	1-249-417-11	CARBON 1K 5% 1/4W	
R879	1-249-417-11	CARBON 1K 5% 1/4W	
R880	△ 1-212-881-11	FUSIBLE 100 5% 1/4W F	
R881	1-249-421-11	CARBON 2.2K 5% 1/4W	
R882	1-249-421-11	CARBON 2.2K 5% 1/4W	
R883	△ 1-212-881-11	FUSIBLE 100 5% 1/4W F	
R1001	1-249-389-11	CARBON 4.7 5% 1/4W (H150:G, IT)	
R1002	1-249-389-11	CARBON 4.7 5% 1/4W (H150:G, IT)	
R1003	1-249-389-11	CARBON 4.7 5% 1/4W (H150:G, IT)	
R7001	1-249-421-11	CARBON 2.2K 5% 1/4W	
R7002	1-249-421-11	CARBON 2.2K 5% 1/4W	
< VARIABLE RESISTOR >			
RV81	1-238-601-11	RES, ADJ, CARBON 22K	
RV82	1-238-601-11	RES, ADJ, CARBON 22K	
RV601	1-238-596-11	RES, ADJ, CAREBON 470	
RV611	1-238-596-11	RES, ADJ, CAREBON 470	
RV651	1-238-596-11	RES, ADJ, CAREBON 470	
RV661	1-238-596-11	RES, ADJ, CAREBON 470	
RV701	1-238-601-11	RES, ADJ, CARBON 22K	
RV721	1-238-603-11	RES, ADJ, CARBON 100K	
RV722	1-238-603-11	RES, ADJ, CARBON 100K	
RV751	1-238-601-11	RES, ADJ, CARBON 22K	
< RELAY >			
RY601	1-515-614-21	RELAY	

Ref. No.	Part No.	Description	Remarks
< SWITCH >			
S701	1-554-088-00	SWITCH, KEY BOARD (SYSTEM RESET)	
S721	1-572-185-11	SWITCH, SLIDE (ISS) (H150:AEP, EE, G, IT/H500)	
< TRANSFORMER >			
T1	1-402-424-11	COIL (ANT, SW3) (H150:E, EA, JE, AUS)	
T2	1-406-346-11	COIL (OSC, SW3) (H150:E, EA, JE, AUS)	
T721	1-433-347-11	TRANSFORMER, BIAS OSCILLATION	
< TERMINAL >			
TB1	* 1-537-138-31	TERMINAL BOARD (ANT) (H150:AEP, EE, G, IT/H500)	(ANTENNA)
TB1	1-537-238-21	TERMINAL BOARD (H150:E, EA, US, CND, AUS)	(ANTENNA)
TB801	1-537-238-11	TERMINAL BOARD (SPEAKER)	
< TEST PIN >			
TP81	* 1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P	
TP701	* 1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P	
TP702	* 1-568-449-11	HOUSING, CONNECTOR(PC BOARD)3P	(H150:AEP, EE, G, IT/H500)
< VIBRATOR >			
X51	1-577-126-11	VIBRATOR, CRYSTAL 7.2MHz	
X81	1-577-075-11	OSCILLATOR, CERAMIC 456kHz	
X201	1-577-358-21	VIBRATOR, CERAMIC 4MHz	
X251	1-567-908-11	VIBRATOR, CRYSTAL 16.9344MHz	
*****			
MISCELLANEOUS			
*****			
115	* 1-635-160-11	PC BOARD, SWITCH	
305	△ 8-848-144-11	DEVICE, OPTICAL KSS-240A	
307	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
64	1-690-971-11	WIRE (FLAT TYPE) (8 CORE)	
64	1-690-971-21	WIRE (FLAT TYPE) (8 CORE)	
65	1-690-970-11	WIRE (FLAT TYPE) (13 CORE)	
65	1-690-970-21	WIRE (FLAT TYPE) (13 CORE)	
66	1-535-832-12	JUMPER, FILM (WITH TERMINAL)	
68	1-575-673-11	WIRE, FLAT TYPE (15 CORE)	
ANT1	1-501-321-61	ANTENNA, TELESCOPIC (H150)	
F901	△ 1-532-742-11	FUSE, GLASS TUBE (H150:US, CND)	
F901	△ 1-532-215-00	FUSE, TIME-LAG (EXCEPT H150:US, CND)	
F902	△ 1-532-259-00	FUSE, TIME-LAG (H150:E, EA, JE, AUS)	
HP1	Y 1-543-319-11	HEAD, MAGNETIC (REC/PB)	
HRP1	Y 1-543-319-11	HEAD, MAGNETIC (REC/PB)	
M1	X-3358-211-1	MOTOR (A) ASSY	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M103	A-4608-362-A	MOTOR (L) ASSY (LOADING)	
M2	X-3358-211-1	MOTOR (B) ASSY	

## Note:

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

## Note:

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
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S1A	1-572-335-11	SWITCH, LEAF (Cr02) (DECK A)	
S1B	1-572-335-11	SWITCH, LEAF (Cr02) (DECK B)	
S2A	1-571-736-11	SWITCH, LEAF (MD POWER) (DECK A)	
S2B	1-571-736-11	SWITCH, LEAF (MD POWER) (DECK B)	
S3A	1-571-736-11	SWITCH, LEAF (PLAY) (DECK A)	
S3B	1-571-736-11	SWITCH, LEAF (PLAY) (DECK B)	
S4B	1-571-736-11	SWITCH, LEAF (REC) (DECK B)	
T901	△ 1-450-055-11	TRANSFORMER, POWER (H150:E, EA, JE, AUS)	
T901	△ 1-450-463-11	TRANSFORMER, POWER (H150:AEP, EE, G, IT/H500)	
T901	△ 1-450-057-11	TRANSFORMER, POWER (H150:US, CND)	

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## ACCESSORIES &amp; PACKING MATERIALS

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1-465-343-11 REMOTE COMMANDER (RM-S6)  
 1-501-369-11 ANTENNA (H500:UK)  
 1-501-374-11 ANTENNA, LOOP (H500:UK)  
 1-558-032-11 CORD, POWER (H500:UK)  
 2-181-754-01 COVER, BATTERY (RM-S6)

3-701-630-00 BAG, POLYETHYLENE (H500:UK)  
 3-754-935-11 MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH,  
 CHINESE, DUTCH) (H500:UK)

\* 4-941-548-01 LABEL, CLASS 1  
 4-950-193-11 LABEL, MODEL NUMBER (H500:AEP)  
 \* 4-951-177-01 CUSHION, UPPER  
 \* 4-951-178-01 CUSHION, LOWER  
 \* 4-951-427-01 INDIVIDUAL CARTON (H500:UK)

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Ref. No.	Part No.	Description	Remarks
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## HARDWARE LIST

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#1	7-685-645-79	SCREW +BVTP 3X6 TYPE2 IT-3	
#2	7-682-547-04	SCREW +BVTT 3X6 (S)	
#3	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#4	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#5	7-685-133-19	SCREW +P 2.6X6 TYPE2	
#6	7-685-648-79	SCREW +BVTP 3X12 TYPE2 N-S	
#7	7-682-550-09	SCREW +BVTT 3X12 (S)	
#8	7-685-649-79	SCREW +BVTP 3X14 TYPE2 N-S	
#9	7-621-255-25	SCREW +PTT 2X4 (S)	
#10	7-621-255-10	SCREW +PTT 2X3 (S)	
#11	7-621-775-20	SCREW +B 2.6X5	
#12	7-685-870-01	SCREW +BVTT 3X5 (S)	
#13	7-623-921-01	RING, RETAINING, CAPSTAN	
#14	7-685-234-19	SCREW +KTP 2.6X8 TYPE2NON-SLIT	
#15	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#16	7-624-105-04	STOP RING 2.3, TYPE -E	
#17	7-621-775-10	SCREW +B 2.6X4	
#18	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#19	7-621-255-15	SCREW +P 2X3	
#20	7-688-001-01	W 2, SMALL	

**Note:**  
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**Note:**  
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